IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

BRIGHT RESPONSE, LLC	*	Civil Docket No. 2:07-CV-371
VS.	*	Marshall, Texas
	*	
	*	August 5, 2010
GOOGLE, INC., ET AL	*	1:10 P.M.

TRANSCRIPT OF JURY TRIAL
BEFORE THE HONORABLE JUDGE CHAD EVERINGHAM
UNITED STATES MAGISTRATE JUDGE

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(Proceedings recorded by mechanical stenography, transcript produced on CAT system.)

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* * * * * *

P R O C E E D I N G S

(Jury out.)

LAW CLERK: All rise.

THE COURT: Please be seated.

Ms. Doan, tell me what you need to tell me.

MS. DOAN: Your Honor, the questions I specifically asked --

THE COURT: Go to the podium.

MS. DOAN: Sorry.

I am terribly sorry. I did not think -- I do not recall asking any questions about Erich Spangenberg's other locations. I know the purpose of that motion in limine. I didn't get anywhere close to that.

THE COURT: Well, there's another, though, that talked about Bright Response's affiliates and other litigations.

MS. DOAN: I have --

THE COURT: No. 27.

MS. DOAN: Yes, sir. And I have the question that I asked, and I didn't -- I think the question was only directed to this litigation. He was in town for this litigations.

THE COURT: Well, I thought it was directed towards -- on behalf of this company and other companies that he's an officer, TechDevelopment (sic).

I've looked at the transcript.

MS. DOAN: I have not seen a transcript, Your Honor. I did not intend to go there.

THE COURT: Well --

MS. DOAN: I'm very, very sorry.

THE COURT: I'm going to instruct the jury that the questions you asked were in violation of the order of the Court, that I had excluded the evidence because it was irrelevant, and it's a waste of the jury's time.

It's irrelevant, because it doesn't have -- there's nothing legally improper with a person or a company investing in intellectual property

and asserting it against others accused of infringement.

MS. DOAN: I agree, Your Honor.

THE COURT: I'm going to tell the jury that many large companies use their intellectual property in the same way, even if they don't make products covered by the patents that they own. And the law requires the Court and the jury to treat the Plaintiffs of intellectual property with the same respect that intellectual property owned by large corporations is treated, and that counsel for Yahoo! knew that when she asked the questions.

And it's up to the jury to decide whether that was done to distract the jury from the merits of the case.

Now, I'm going to deduct 30 minutes from your trial presentation time and 25 percent of the time that I'm going to assign to Yahoo! for final argument.

Now, these limine orders have teeth, and I'm finding that that was in violation of my order in limine.

Bring the jury in.

(Pause in the proceedings.)

THE COURT: All right. Stand at ease for three minutes.

LAW CLERK: All rise.

(Recess.)

(Jury in.)

THE COURT: Please be seated.

Ladies and Gentlemen, before lunch, you heard testimony concerning the extent to which the witness had been in town for patent cases that involved Bright Response and other entities.

The questions were asked in violation of an order of the Court excluding that type of testimony. I excluded the evidence from the case, because it has no relevance to the issues that you're going to be deciding, and, frankly, it's a waste of your time.

It's irrelevant to this case, because there's nothing legally improper with a person or a company investing in intellectual property and asserting it against others that are accused of infringement.

In fact, many large companies use their intellectual property in the same way, even if they don't make products that are covered by the patents that they own.

The law requires the Court and the jury to treat the Plaintiff's intellectual property with the same respect that the intellectual property owned by large corporations is treated.

Now, counsel for Yahoo! knew that when

she asked the questions, and, therefore, it's up to you to decide whether those types of questions were asked to distract you from the merits of the case.

Any additional questions?

MS. DOAN: No, Your Honor. Pass the witness.

THE COURT: Redirect?

MR. HUESTON: Very briefly, Your Honor.

REDIRECT EXAMINATION

BY MR. HUESTON:

Q. Mr. Sheafe, you were asked a number of questions about Yahoo! patents and patent categories and whether they were submitted to the Patent Office.

Let me ask you this: Do you know whether Yahoo! made the claim that any of those patents or patent categories that were referenced in cross invalidate the Rice patent in this case?

A. Not to my knowledge, no, sir.

Q. In the reexamination process, Mr. Sheafe, do you know whether Yahoo! had a chance to submit patents of its choosing to the Patent Office with its request for reexamination?

A. Yes, sir. As I said before, it's my understanding that they can submit whatever they would like to that they feel maybe invalidate it.

Q. Did you or Bright Response take any actions to prevent Yahoo! from submitting any patents of its choosing?

A. No, sir. Not only are we not allowed to do that, we wouldn't want to do that.

Q. Did the Patent Office confirm or reject Claims 30, 31, and 33 in this case?

A. They have confirmed them in all instances.

MR. HUESTON: No more questions.

THE COURT: Recross?

MS. DOAN: No questions, Your Honor.

THE COURT: All right. You may step down.

Who will be your next witness?

MR. FENSTER: Your Honor, Bright Response rests.

THE COURT: All right.

Counsel, approach.

(Bench conference.)

THE COURT: You had a stipulation that you can reserve motions for judgment as a matter of law until the end of the day, after I have told the jury that they will be deemed to be timely made at the close of the Plaintiff's case.

MS. DOAN: That's fine, Your Honor.

THE COURT: All right.

(Bench conference concluded.)

THE COURT: Ladies and Gentlemen, we are at milestone in the case. You've heard all the evidence that the Plaintiff is going to offer in support of what's called the Plaintiff's case-in-chief.

We're now moving into the Defendants' case-in-chief.

With that, Mr. Verhoeven and Mr. Rooklidge, you may call your first witness.

MR. VERHOEVEN: Thank you, Your Honor. Google calls Jeff Huber.

And may I approach while we get him?

THE COURT: Yes.

MR. VERHOEVEN: He needs to be sworn, Your Honor.

THE COURT: Okay.

MR. VERHOEVEN: Your Honor, we would like to -- sorry.

THE COURT: Just a second.

Okay.

(Bench conference.)

MR. VERHOEVEN: There's only one question that I'm a little concerned about not filing any motion in limine, and that is when I asked him if he's a senior

executive. He's on the Operating Committee, and I asked him, if the 65 million was presented to the Operating Committee, would they agree to pay that.

He said no, and I said, well, what would you do. And he said, well, we are a company of 10,000 engineers, and we would build something different and better.

Now, I don't want any question that -- that goes to the design-around stuff you excluded, Your Honor, so I'll tell him not to get into that, if you don't want to. But that's what he said in response to my question when I talked to him yesterday.

THE COURT: But you're not going to go into any specific design-arounds?

MR. VERHOEVEN: Absolutely not.

THE COURT: It's permissible.

MR. VERHOEVEN: Thank you, Your Honor.

(Bench conference concluded.)

THE COURT: All right. Sir, raise your right hand and be sworn.

(Witness sworn.)

MR. VERHOEVEN: Proceed, Your Honor?

THE COURT: Yes, please.

MR. VERHOEVEN: Thank you.

JEFF HUBER, DEFENDANTS' WITNESS, SWORN

DIRECT EXAMINATION

BY MR. VERHOEVEN:

Q. Good morning, Mr. Huber.

A. Good morning -- good afternoon.

Q. Good afternoon; that's right.

Would you please state your full name for the record.

A. It's Jeff Huber.

Q. Have you ever given any testimony in a trial before?

A. I have not.

Q. Okay. Remember to speak into the microphone, and the court reporter needs to hear you.

A. Right.

Q. Let me ask you a few questions about your background.

Where did you grow up, sir?

A. I grew up on a small dairy farm near a very small town in the Midwest, specifically Monee, Illinois, population 237.

Q. Where did you go to school?

A. I went to the University of Illinois where I got a degree in computer engineering in 1989. I was the second person in my family to go to college. I have five siblings.

And then in 1994, I went to Harvard University and got a master's in business administration, an MBA.

Q. Mr. Huber, are you married?

A. I am. Just celebrated our tenth anniversary last week. I have two children, an eight-year-old son and a seven-year-old daughter.

Q. Where do you currently work, Mr. Huber?

A. I work at Google.

Q. What is your current title at Google?

A. My title is Senior Vice President of Engineering.

Q. How long have you been in your present position?

A. I've been in my position for -- for the entire time, for seven years. The -- my title has changed over time. My responsibilities have been consistent.

I was first Director of Engineering, then Vice President of Engineering. Now in the last several years, Senior Vice President of Engineering.

Q. Now, in your current role as Senior Vice President of Engineering at Google, can you describe for the jury what your primary responsibilities are?

A. Yes. As mentioned throughout, I've been responsible for advertising systems and products, including AdWords, which has been the topic of

discussion today.

I'm responsible for the overall engineering and operations, creation of the technology, operation of the products and systems. In addition to my advertising responsibilities, I'm also responsible for our efforts around online shopping, payments, billing.

I've also been responsible for our free consumer products, things like Gmail, Google Calendar, GoogleBox, Google Voice, and the versions of those that we sell to business -- small businesses, enterprise, large business as well as providing free to colleges and universities and schools.

Q. Your position at Google, is it fair to characterize that as a pretty senior position?

A. I think it is a senior position, yes.

Q. Okay. And you have people who report to you?

A. Yes. I'm responsible for over 2,000 people at Google, mostly software engineers, computer scientists. Roughly, one out of eight people that work at Google are on my team.

Q. What is the most senior level executive committee at Google, sir?

A. That's called the Operating Committee or the OC.

Q. And how many people sit on the Operating

Committee?

A. There's 15 senior executives on the Operating Committee.

Q. And are you a member of that committee, sir?

A. I am and have been for the last four years, since 2006.

Q. What are some of the other members of the committee?

A. The CEO of the company, Eric Schmidt, is a member of the Operating Committee as well as the founders of Google, Larry Page and Sergey Brin.

Q. Now, did you work somewhere before you joined Google, sir?

A. I did. I worked at eBay, and at @Home Network. It was later known as Excite@Home after an acquisition.

Q. And eBay, that's the online auction site?

A. Yes. It's the online auction site used by millions and millions of people.

Q. What was your title at eBay, sir?

A. My title there was Vice President of Architecture and Systems.

Q. And what were your responsibilities as Vice President of Architecture and Systems at eBay?

A. So my team and I built out all of the major

functions of eBay, including the auction itself, the marketplace search within eBay. It was -- I had a team of over 200 engineers working in those functions.

Q. So that was an engineering position as well?

A. It was an engineering position, but it had a pretty substantial business and strategy piece to it.

So, for example, I drove the eBay strategy around enabling businesses to connect into eBay, to list their items that drives now about half of eBay's traffic.

Q. Did you mention Excite@Home as another place you worked?

A. Yes. So it was originally @Home Network. I was a very early employee there. @Home was building out the high-speed broadband networks working with cable companies.

We had all of the major cable companies as our customers in North America, Europe, Asia. Also, we had over 8 million paying high-speed Internet subscribers. And then Excite was a very popular search engine and portal in the 1990s that had over a hundred million active users.

Q. I'm not sure I asked you this. What was your position at Excite?

A. I was the Senior Vice President of

Engineering.

Q. That was another technical position?

A. It was a technical position, but, you know, like eBay, it had a pretty substantial business and strategy piece.

So, for example, for @Home Network, I wrote the original documents that were used for @Home's initial public offering when they became a public company.

Q. Now, when did you join Google?

A. I joined Google in the fall of 2003.

Q. And what was your title when you joined?

A. When I started, I was Director of Engineering.

Q. And now you're Senior Vice President of Engineering; is that right?

A. That's correct.

Q. So you -- you've changed your title over time?

A. Title is -- has changed with promotions. My responsibilities have grown, as mentioned. The consistent part is around the advertising systems.

Q. Is it fair to say that you're very familiar with the way that Google AdWords works?

A. Between working on the systems for seven years, yes, I'm very familiar with the systems.

Q. Are you also familiar with the history of

advertising in connection with search at Google?

A. Yes, I am. I'm familiar with the history of advertising search. I'm history -- I'm familiar with history of Google in general from being there for seven years, by being on the Operating Committee for four years, and I've actually shared an office with two of the first ten employees of Google the entire time that I've been there. So I'm very familiar with it.

Q. How many engineers work at Google?

A. Coming up on 10,000, but 9,500 engineers currently.

Q. Let's talk a little bit about the history of Google.

When was Google founded?

A. Google was founded in the fall of 1998.

Q. And how big was Google when it was founded?

A. It was very small. It was -- I mentioned the founders earlier. It was two of them, just Larry Page and Sergey Brin. They were graduate students at Stanford University when it was founded.

Q. And do you -- do you have an understanding as to where their first office was when they founded Google?

A. It was in the garage of a friend of theirs. Her name is Susan Wojcicki. She's also still with

Google today, and, in fact, has been my -- I share an office with Susan and have for the last five years.

Q. Do you have an understanding as to what Mr. Page and Mr. Brin were working on during this very early timeframe, sir?

A. Yes. They were working on building an internet search engine.

Q. And can you explain to the jury at a very high level what is a search engine?

A. Yes. So a search engine is a website or an internet site where you go to find whatever you're interested across the internet.

So, for example, if you go to www.google.com, there's a search box that's presented there. You can type in a word or two or three, or whatever you're interested in.

Google or other search engines will go out and look across all the information that they have indexed of information across the web, bring back the results for you to click on and find what you're looking for.

Q. Now, the technology that Mr. Page and Mr. Brin were working on, did that relate to a search engine, and if so, can you explain to the jury at a high level how?

A. Yes. The specific technology they were working on was a thing called PageRank, which was an

insight that they had that was really a big breakthrough.

It -- so PageRank is an algorithm for link analysis. So if you think about web pages, they have the -- the links to other places. The PageRank algorithm was a way of understanding how all of the links across the internet interrelate.

So they understood the trust between sites, and because of that, were able to deliver dramatically better results than other products that were out there at the time, including where I was working, which was the Excite search engine.

Q. Was this a technology -- this PageRank technology, was this important to Google?

A. It was very important. It was, as mentioned, a conceptual leap in how people thought about things, because before that, search engines just worked by looking at words on a page. So it would do naive things like if there were a word that was repeated on the page, they would think that was important, and that would be ranked higher.

PageRank, instead, was able to leverage the distributed knowledge of everyone that was out there building web pages and websites to provide much, much better results. And it was the foundation on which the

business was made. It was started and ultimately became a successful product.

Q. Now, let's switch subjects to AdWords, which is the technology that's accused in this case.

Mr. Huber, back in 1998, based on your understanding when Mr. Page and Mr. Brin were just starting Google, was Google displaying any advertising in connection with search results back then?

A. In that timeframe, no, there was no -- there were no ads on Google. It was just the search results and basically still a research product in some respects.

Q. And when did Google get into providing advertising in connection with search?

A. Google started experimenting with advertising first in 1999, but the first recognizable product was released in October 2000, which was then a way for advertisers to come in and sign up for advertising themselves.

Q. Did there come a time when Google started using the name AdWords in connection with its advertising?

A. It was that product released in October of 2000 where AdWords was first used.

Q. Okay. Now, this first AdWords system back in 2000, can you describe generally to the jury, how did

that work?

A. Sure. So an advertiser was able to come in to a site that Google provided, adwords.google.com, indicate that they want to provide advertisements that matched Google searches.

And the way they did that was providing keywords which were topics that they wanted to advertise on. They would then say how much they were willing to pay each time one of their ads was shown. That was called impression-based pricing. An impression is every time you're viewing one of your search results or basically viewing a page on Google. So they paid every time an ad was shown.

And for the history, the first advertiser that signed up in a few minutes after that product was launched was a little merchant selling live Maine lobsters. You could order through the mail and make a lobster dinner.

Q. So let me slow down. You've got a lot of information, so let me slow it down a little bit.

Can you explain to the jury what you mean when you say impression-based?

A. Sure. A bit more on that.

So as mentioned in impression, if you do a Google search, we bring back the results for you. It's

a combination of web pages that are a match for your search.

We also show some advertisements specifically at the top and on the side, around the search results.

Anytime that you submit a query and you get those results back, that's called an impression. So basically every time you do a search.

And specifically in the advertising system then, an advertiser paid on a per-impression basis. So they would say I'll give you a penny or two cents or five cents per impression. They paid every time an impression was shown.

The complication of that is that it meant the advertiser was bearing all of the risk, because they didn't know if a user was interested in what they were doing, or if we were showing them on the right results. So there was a lot of risk that the advertiser bore.

Q. Now, I think you also mentioned in this first AdWords system back in 2000 that advertisers would pick keywords; is that right?

A. That's correct. An advertiser would pick a keyword. And what they're doing there is find the topics that they want to advertise on.

So an example of the live Maine lobster is they might do lobsters, live lobsters, lobsters by mail

as examples of their keywords. They would also in that system provide the ads for what we call the ad creative, which is basically the -- the content that they want to show in their ad display, which is basically a title, a one-line description, and then a URL or physically the link of how -- the thing you click on to get to their website.

Q. And you're still talking about the initial system back in 2000. If someone like myself were to type a search query, how would that work in connection with these keywords that the advertisers picked back then, in 2000?

A. Okay. We would take your query, yours as the user, and match that against the keyword that was provided by the advertiser, match those, look for ads, candidate ads to show, and then display them.

Q. Did there come a time when technology for AdWords changed?

A. Yes. There was -- the next significant change in the system happened in October of 2002.

Q. Okay. And what happened in 2002?

A. So 2002 was a very big shift for the system, in the product. And specifically, there were two things that were introduced there.

One is that the pricing model for the

advertiser changed. So instead of being impression-based, it changed to being what we call a cost per click, or click-based.

So I as an advertiser only have to pay if a user actually clicks on my ad and is delivered to a site where I can sell them something. So the whole model changed for the advertiser in terms of how they think about risks.

The other major change was we have an auction that is used to decide which ads to show and which order to show them in.

Obviously, whether you show or not is important, because if you don't show, you can't get a click. But also, the order matters a lot, because ads that are at the top of the results get a lot more people to click on them, because Googling the top things that are at the top are more interesting and more relevant. The change in the auction was to use what we call the clickthrough rate as a major piece -- a major component of the auction.

Q. Okay. So if I understand you correctly, in 2002, the business model for AdWords, as it relates to advertisers, changed from impression-based to cost-per-click-based; is that correct?

A. Correct.

Q. And in that instance, from 2002 on, advertisers only paid to use AdWords, if a user clicks on their ad?

A. That is -- that is correct.

Q. Okay. Now, this change in 2002, how would you rank that in importance to Google vis-a-vis, for instance, PageRank and the institution of AdWords and other innovations at Google?

A. It's a very big one. The one I should probably say a little bit more about is the use of the clickthrough rate in the auction.

Q. Okay.

A. Because what's happening there is essentially we're able to use all of the knowledge of Google users to make the advertising results more and more relevant.

So what happens in the auction, there's two pieces of it. One is the bid that the advertiser provided.

That's essentially their vote of how important this is to them for how much they want to acquire a customer.

The other piece of the auction is -- actually, just multiple these numbers together is the clickthrough rate of the ad. The clickthrough rate is determined by all of the users clicking on an ad and saying that's

important.

And when we talk about clickthrough rates, it's expressed as a percentage number. So, for example, if you say something has a 5-percent clickthrough rate, that means that if we showed it to a hundred people, about five would click on it -- not about five -- five would click on it and thereby express that that was a relevant useful result for them.

So by using the clickthrough rate in the auction and taking it into account both the advertiser's vote of how much they want to get a customer, the customer's vote on how relevant and useful this is to them, we were able to create great dynamics in the system and provide much better results for our end users.

It was a dramatic shift. We talked about PageRank earlier and how important that was to the early days of Google, and it's really the foundation of which Google started. That changed. In October 2002 was as significant for ad systems and the success of the ad systems as PageRank was for Google originally.

Q. Okay. Now, Mr. Huber, have you heard the term SmartAd Selection System?

A. I have. We call it SmartAds.

Q. Can you explain to the jury at a high level

what is SmartAds?

A. SmartAds is an improvement over the system that we had in 2002. I mentioned the auction that has both the advertiser bid and the user's clickthrough rate.

If you think about the auction, one of those things that we need to do there is to essentially predict the clickthrough rate, because at the time we're showing it to -- to you, you haven't taken any action yet. We don't know what you're going to do. So we have to take a guess what your clickthrough rate is going to be for your specific situation, your query, where you are, et cetera.

And SmartAds is an improvement over the model that we had in 2002 to do that.

Q. Okay. Now, you are the Director of Engineering in 2004 when SmartAds was implemented; is that right?

A. That's correct. I started in 2003.

Q. Were you responsible for the development and launch of SmartAds?

A. I was. The project had started a little bit before I got there, but I was responsible for a significant portion of the development and ultimately its launch and rollout.

Q. Can you explain to the jury the difference in the way that the click -- clickthrough rate was used before you had SmartAds and after you had SmartAds?

A. It's conceptually very similar. As I mentioned in the 2002 product, which was a big leap, we started using clickthrough rate in the auction. We had to predict clickthrough rates then. It's conceptually very similar.

SmartAds is a better way of doing that, because we were able to design the system to use a lot more data, a lot more variables, and also a big part of it we had to evolve to support the huge data volumes we're seeing from both the popularity of Google and advertisers using the ad system after the 2002 launch.

Q. If you were to rank the change or improvement of SmartAds in 2004 versus the change in 2002, could you help give us some flavor of how big of an innovation this was?

A. So I mentioned 2002. I compared it to PageRank originally where it was just a conceptual leap that nobody had done previously. It was important to the ad system as PageRank was to Google.

The 2004 change was a -- it was a nice improvement. It was an incremental, evolutionary improvement as opposed to revolutionary like 2002 was.

Q. The AdWords system in 2002, did that system -- let me withdraw the question.

I think you said the initial AdWords system back in 2002, one of the things it did was it took a query and processed that against an advertiser submitting a keyword, right?

A. Yes. The user's query against advertiser's submitted keywords. And that's consistent.

Q. Sorry?

A. That's consistent throughout 2002/2004 today.

Q. That was going to be my question.

So throughout these different iterations, that functionality has remained in place; is that right?

A. That has been consistent.

Q. Okay. And does AdWords, after SmartAds, does that use the auction that was in the earlier technology as well?

A. Correct. It uses conceptually the same auction as 2002.

Q. Now, how often does Google -- since you've been there at least, how often does Google improve networks?

A. Everything we're doing across Google, we're continually improving changes in the ad system is completely consistent with that. Across the ad system,

we make on the order of 30 quality changes per quarter. Quality changes are trying to improve the quality results we show for users. So that's approximately -- a quarter is three months; that's roughly two weeks of the improvements we make.

Across the entire ad system which has a bunch of other functions and functionality, including things that advertisers use to set up and manage their -- their accounts, there's about a hundred changes per quarter.

Q. Why does Google keep changing the system, sir?

A. So part of it is Google believes -- they're a technology company. We believe in innovation. We believe that by making our product better and better, we will make our users happy, and they'll continue to use us.

There's lot of other choices out there. You can use other search engines. Advertisers can find other ways to reach customers. So we believe that we have to keep getting better.

Q. Is -- does the SmartAds system, in your view, what has made AdWords so successful?

A. I think SmartAds is a piece of the puzzle but a relatively small piece. If you think about, you know, the big change that happened in 2002, which was the conceptual change that balanced the risk for advertisers

in a great experience in terms of relevant ads for users, was a huge part of it.

If you think about -- I mean, just the -- the success and usefulness of Google search -- I mean, people come to Google to use Google search. They don't come to use the ad system as much as I would like to think they do. They're using our great products. They're using our products like Gmail. So just the user base is a huge part of it.

There is also, as I mentioned earlier, the advertiser's side of everything it takes for an advertiser to set up and run and manage their campaign. We have thousands of salespeople that interact with them on a regular basis. We provide great measurability for the kind of investment or the money that they spend on Google advertising.

Q. Mr. Huber, have you ever heard of the phrase case-based reasoning?

A. I have heard of case-based reasoning.

Q. When did you first hear of it?

A. So I was a student at the University of Illinois taking computer engineering, computer science classes, and I took classes in expert systems, artificial intelligence, and case-based reasoning was one of the topics there.

I additionally worked on a project when I was out of school as a young engineer on an expert system -- case-based expert system that was being developed for an investment bank.

Q. Does AdWords use case-based reasoning?

A. No. AdWords does not use case-based reasoning.

MR. FENSTER: Objection, Your Honor, improper opinion testimony.

THE COURT: Well, the witness has not been identified as an expert witness in this case. I will allow him to briefly state what his understanding is as one familiar with the system. So to that extent, I will overrule it.

He's answered the question.

MR. VERHOEVEN: Yeah, he has, Your Honor.

THE COURT: So move along.

MR. VERHOEVEN: Thank you.

Q. (By Mr. Verhoeven) Mr. Huber, you mentioned speed a moment ago. If I go on to google.com and I enter a search query today, then hit the search button, how long does it take Google to return search results on ads?

A. It's very fast. Our goal is less than a half a second. I did a search last night and just as an

example, it was .33 seconds, which is 330 milliseconds, 330/1000 of a second.

Q. So the whole process that you're talking about earlier, about how AdWords works, is accomplished within that timeframe?

A. Yes. If you think about what's happening essentially in parallel, we're going out and looking across all the content that Google has indexed across the web, tens of billions of web pages.

In parallel, we're going out to the advertising system, looking over all of the active ads that we have, over 2 billion.

Bringing back the best matching ones. Running the real-time auction, and then returning that to the user in, you know, less than a half a second.

Q. How many active ads does Google have in its database, roughly?

A. I mentioned it's over 2 billion. If you think trying to get your head around a number like that, it's -- if you put each ad on a piece of paper and stacked up the pieces of paper, that would be a stack 86 miles high.

So if that was outside of the Square here, if you tipped it over, the top would fall on Texarkana.

Q. Is the speed of response something that's

important to Google?

A. It's absolutely central to what we do. It's part of the Google brand. It's part of the user experience. It's part of what the users expect from Google.

Q. And how is Google able to achieve such fast speed in its responses?

A. It -- there's a huge investment and focus that we put behind that from, you know, the very foundation of the business on up.

So, for example, data centers. We have data centers across the country and around the world. If you think about starting with basics, the speed of light. It's about 3000 miles across the country. At the theoretically fastest you could get data from one place to the other would be the speed of light. That takes about 20 milliseconds or 50th of a second to get data from one place to another.

Data through fiber is about another 10 milliseconds. 30 milliseconds, you have to go through a network. There's some additional overhead on top of that. It's about 50 milliseconds, or a 20th of a second.

That, for us, is too slow, so we put data centers -- built data centers, spent hundreds of

millions of dollars building data centers across the country and around the world to get them closer to our users to save, say, 25 milliseconds.

Beyond that, in the data centers that we built, we build our own computers. We lay out the motherboards. We make the physical layout of the motherboard faster. We have engineers that are working at the operating system level at the very deepest levels to make the -- the core operating system faster.

We build all of the software that runs on those in our clusters in our data centers to be able to provide the fastest results possible. We're absolutely obsessive about it, because it's so important to our users.

Q. So I take it from that explanation that Google responds to search queries automatically?

A. Yes. We respond to search queries automatically.

Q. Does a human being ever review a search query between the time it's submitted and prior to the time that Google provides a response?

A. A human never is involved in the process, and given it's returned in less than half a second, it would be impossible to do so.

Q. If a user types in a search query on Google

that's using AdWords, is there ever an occasion in which a user does not receive an automatic response?

A. A user always receives an automatic response, assuming their electricity is on in their house, yes.

Q. Mr. Huber, I think you mentioned that you sit on the Operating Committee, the most senior committee at Google?

A. I do.

Q. Can you describe for me, what are the duties of the Operating Committee?

A. The Operating Committee is responsible for the overall performance and execution of the business. We review budgets, significant investments, strategy, and direction of the -- of the company.

Q. If Google were going to spend $64 million on a patent license, is that the sort of decision that would have to be handled by the Operating Committee?

A. $64 million is a lot of money. We would absolutely bring it to the Operating Committee.

Q. Has Google ever spent $64 million on a patent license, sir?

A. We've never spent that much on a patent license.

Q. Why not?

A. Google is a technology company. We have

nearly 10,000 engineers, some of the best engineers in the world. We create technology and innovate. That's what we do.

Q. If Google were told that if it wanted to practice a patent and it would have to pay $64 million, would Google pay that?

A. We would not.

Q. What would you do?

A. As I mentioned, we're a technology company. We believe in innovation for our users. We create technology. We've got great engineers. We've invested a lot to build up our team with some of the best engineers in the country and in the world.

If there was some -- if there was somebody that had technology that looked like it was close to what we do, we would create new technology. We would innovate. We would do something different. We would do it better.

MR. VERHOEVEN: No further questions, Your Honor. Pass the witness.

THE COURT: All right.

Cross-examination.

CROSS-EXAMINATION

BY MR. FENSTER:

Q. Good afternoon, Mr. Huber. My name is Marc

Fenster.

A. Good afternoon.

Q. Now, Mr. Verhoeven on direct asked you some questions about the search engine that Google started with when it was first founded.

Do you recall that?

A. I do.

Q. Now, you understand that the search engine has nothing whatsoever to do with this case?

A. I don't understand the details of the case.

Q. Do you have -- do you know that it's not relevant, that it's not accused in this case?

A. If you say so.

Q. Okay. Now, you testified on direct that Google started serving ads in 2000; is that right?

A. That is correct.

Q. And that is well after the 1997 priority date of the Rice patent at issue, isn't it?

A. 2000 is after 19 -- is after that.

Q. Yes. The Rice invention, the Rice patent that's at issue in this case was -- has a priority date of 1997, and Google didn't even start serving ads until after that, correct?

A. Google started serving ads in October of 2000.

Q. Now, you testified that the SmartAds system

was implemented -- it was started in 2004, correct?

A. It was started in 2003. It was deployed in 2004.

Q. Okay. It was deployed in 2004. And that's exactly consistent with what Dr. Rhyne testified to, right?

A. I don't know Dr. Rhyne's testimony.

MR. VERHOEVEN: Objection, Your Honor. This witness was sequestered under the Rule.

MR. FENSTER: Very well, Your Honor.

THE COURT: I'll sustain the objection.

Q. (By Mr. Fenster) Now, Google moved to Smart -- to the SmartAds system in 2003 and deploying it in 2004, because it was an improvement over the prior system, correct?

A. It was started in 2003 and was deployed in 2004. And, yes, the reason that we deployed it was because we believed it was an improvement.

Q. Now, the old system, the 2002 system, is that sometimes known at Google as the dumb ad server, dumb ads?

A. It's also known as a creative stats model, but yes.

Q. Now, when the SmartAds system -- when Google switched from the dumb ads system to the SmartAds system

in 2004, did Google do any testing to evaluate the improvements?

A. We did do testing, yes.

Q. And, in fact, you measured various metrics, correct?

A. That is correct.

Q. You measured speed, correct?

A. Yes.

Q. And you measured relevance, correct?

A. Measured by clickthrough rate.

Q. Right.

Now, you testified on direct that both speed and relevance are of utmost importance to you, correct?

A. That is correct.

Q. And you testified that the SmartAds system was an incremental improvement over the prior system, correct?

A. It was an incremental improvement.

Q. Now, when --

MR. FENSTER: Joseph, can you put up Plaintiff's Demo Slide 24 from the opening, please?

Q. (By Mr. Fenster) Now, Mr. Huber, you testified that one of the changes in the history of the system was to go from impression-based to click-based pricing, correct?

A. Yes, that's true.

Q. Okay. So the more clicks that Google gets, the more money it gets, correct?

A. Mathematically, that's correct.

Q. And isn't it true that incremental improvements in speed and relevance will increase the number of clicks that Google gets on the AdWords service?

A. Yes, although relevance isn't just -- as mentioned, isn't just done by the SmartAds system by any means.

Q. Right.

But the faster and the more relevant it is, the higher the clickthrough rate, correct?

A. The more relevant results that we can show, because we predict clickthrough rate better, because we have more advertisers, because we have more ads, because we have other pieces of the system that select appropriate ones, there are many, many pieces of it. But, yes, we work hard on improving the relevance of our system.

Q. That's right.

In the SmartAds system, one of the improvements was to increase the number of clicks that Google got, correct?

A. It wasn't strictly to improve the number of clicks. It's to improve the relevance for our users.

Q. Mr. --

A. -- because we can choose how many ads we want to show.

Q. Mr. Huber, did the move from the dumb ad system to the SmartAds system in 2004 increase the number of clicks and clickthrough rate at Google achieved?

A. It didn't -- it didn't improve the number of clicks, because that's a tuning decision. It did improve the relevance of the results that we showed.

Q. And by improving the relevance, you improved the clickthrough rate, correct?

A. It did improve the clickthrough rates of the ads that we showed.

Q. And that resulted in more revenue to Google, correct?

A. Along with many other factors, yes.

Q. Now, you said that this was an incremental improvement, correct?

A. Yes.

Q. Now, isn't it true that when you serve as many ads as Google does that even a really small incremental change can have a huge impact on revenue?

A. It's math. If we make a 1-percent improvement, that's a 1-percent -- if we make a 1-percent improvement in modernization, which relevance is a piece of, that is revenue.

Q. Right. And when you're serving 10 billion -- now -- let me back up.

AdWords responds to over 10 billion search requests a day, correct?

A. That number seems a little bit high, but it is billions.

Q. That's billions, right?

So even if you made a marginal improvement of a couple percent, or even 1-percent improvement, when you're serving billions of ads per day, that would have a large impact on Google's revenues, correct?

A. Yes. There's another fact that we're not taking into account, which is we do our best to measure these systems when they come out. But there are many, many factors that go into what ultimately is relevant and the rate of modernization.

They also tend to -- because of the inter-relation effect, you can't separate them out easily. They also have a tendency to decay over time.

So, for example, our head of sales has said that if we took all of the improvements that were done

that are claimed, we would be four times the size we are today. So you have to be careful on working in individual pieces.

MR. FENSTER: Objection, and move to strike everything after yes.

THE COURT: Well, I will sustain the objection. It's cross-examination, so if you can limit your answer to a yes or no answer, please.

THE WITNESS: Sorry. This is my first time.

THE COURT: That's alright. I'm not fussing at you. Mr. Verhoeven is going to have a chance to ask you some more questions, if you need to explain.

THE WITNESS: All right. Thank you.

THE COURT: You bet.

Q. (By Mr. Fenster) Mr. Huber, isn't it true that since Google implemented AdWords in 2004, it has made over $25 billion from the AdWords system that's accused in this case?

A. If you take the aggregate revenues per year, yes, but it's -- again, people are coming to Google to use Google search and all of our other products, so we use AdWords for making money. But I wouldn't say they come from ads.

Q. Now, you stated on direct that speed and

relevance were critical to the success of Google's AdWords product, correct?

A. Critical to the success of all of our products, including AdWords.

Q. Now, are you aware that Dr. Rhyne has testified that some of the benefits of the Rice patent are improving speed and relevance?

A. I --

MR. VERHOEVEN: Objection, Your Honor. That's two questions.

THE COURT: Are you aware of it? Are you aware of that or not?

THE WITNESS: I am -- I'm sorry. I don't know what Dr. Rhyne testified.

Q. (By Mr. Fenster) All right. Now, Mr. Verhoeven could have asked you anything on direct, but what he chose to ask you was -- with respect to the 64-million-dollar question, he asked you would Google pay $64 million for a technology like this, correct?

A. He asked that.

Q. Now, Mr. Verhoeven didn't ask you on direct if Google would have agreed to pay a 0.25-percent royalty, did he?

A. No, he did not ask me that. We wouldn't do that, because it turns into real numbers.

MR. FENSTER: Objection. Move to strike. No further questions.

THE COURT: Sustained.

Additional questions?

MR. VERHOEVEN: Nothing further, Your Honor.

THE COURT: From Yahoo!?

MR. ROOKLIDGE: Nothing, Your Honor.

THE COURT: All right. May this witness be finally excused?

MR. FENSTER: Oh, I apologize. No further questions.

THE WITNESS: May he be finally excused?

MR. FENSTER: Yes, Your Honor.

THE COURT: Objection from any other parties?

MR. ROOKLIDGE: No, Your Honor.

MR. VERHOEVEN: No, Your Honor.

THE COURT: All right. Thank you for coming.

THE WITNESS: Thank you.

THE COURT: Who will be your next witness?

MR. PERLSON: Google calls Bartholomew Furrow.

Bring him inside.

MR. VERHOEVEN: Your Honor, may I approach while we're getting the witness?

THE COURT: Yes.

(Bench conference.)

MR. VERHOEVEN: If it's alright with Your Honor I'd like to go back to the office and prepare for tomorrow, but I don't want to leave without -- if that's okay. I'll stay if you want me to stay, Your Honor.

THE COURT: Well, I mean, you can be excused.

MR. VERHOEVEN: Thank you, Your Honor. The last time I did that, it wasn't this firm. It was opposing party. There was a comment that I wasn't here, so I hope to avoid that.

THE COURT: I would hope people wouldn't comment on the absence of counsel. I don't think that's appropriate.

MR. SPANGLER: We won't do that, Your Honor.

THE COURT: Certainly y'all are all ably represented by multiple lawyers. Somebody needs to be here for whatever reason. It's okay with me, and I appreciate you letting me know before you do. I don't have a problem with it.

MR. VERHOEVEN: Thank you, Your Honor.

(Bench conference concluded.)

THE COURT: All right. Mr. Furrow, would you raise your right hand for me to be sworn in.

(Witness sworn.)

THE COURT: All right. Come around, sir. Have a seat. And if you don't mind, try to speak up and talk into the microphone.

THE WITNESS: How's this?

THE COURT: We'll see.

BARTHOLOMEW FURROW, DEFENDANTS' WITNESS, SWORN

DIRECT EXAMINATION

BY MR. PERLSON:

Q. Good afternoon, Mr. Furrow.

Would you please state your full name so we can get it on the record.

A. Bartholomew David Furrow.

Q. Now, Mr. Furrow, where do you currently work?

A. I work at Google.

Q. And how long have you been working at Google?

A. A little bit under four years.

Q. And can you tell us what your current title is at Google, please?

A. I'm Senior Software Engineer.

Q. And do you work in any particular group within

Google?

A. I work on the ads quality team.

Q. What's the ads quality team?

A. It's a team responsible for making sure that the ads we show to users that visit the Google website are relevant to the users and generally good ads.

Q. And how many members are on that team?

A. I would say around about a hundred, but I would be guessing.

Q. And is there a particular part of the ad system for which you are primarily responsible?

A. Yes. I primarily work on the SmartAds Selection System.

Q. Is that what -- well, you haven't heard, but that's what we've referred to as SmartAds sometimes?

A. I would assume so, yes.

Q. And how long have you worked with SmartAds?

A. Since I joined Google, so a little over four years.

Q. We'll get back to AdWords in a second. Let me just ask you a few questions about your background.

Where did you go to school?

A. I did a bachelor's degree at Queens University, which is in Ontario, Canada. And I did a master's degree at the University of British Columbia on

the West Coast.

Q. And what types of degrees did you get?

A. I got a bachelor's of science in physics and a master's of science in physics.

Q. And when were those degrees?

A. 2004 and 2006.

Q. Okay. And did you join Google right after college?

A. Yes -- well, I graduated shortly after joining Google, so I did my master's degree and I finished it up while I was at Google.

Q. Did you have any internships?

A. Yes, I did.

Q. And where did you have those internships?

A. At Google.

Q. What was your first position at Google after the internships?

A. When I joined in 2006, I was a Software Engineer II, which is just a number to rank software engineers.

Q. Did you get a promotion?

A. I did.

Q. And what was that?

A. I went straight from II to III.

Q. Okay. And what are you now?

A. Now I'm a Senior Software Engineer, and that was one promotion after III.

Q. So you skipped IV?

A. They skipped straight from IV to Senior.

Q. And have your responsibilities changed during that time?

A. Broadly speaking, I'm still working on the same stuff, but as I become a better engineer and learned more while working at Google, I have generally worked on more things. People come to me more often with questions and to consult with me.

Q. Okay. Now, is working with source code a significant part of your job?

A. Yes, absolutely.

Q. And we've talked about AdWords a lot. And do you work a lot with the AdWords code?

A. Yes.

Q. Let's talk a little bit more about AdWords in detail.

Now, you understand that AdWords is the product that's accused here in this case?

A. I do.

Q. Okay. And I think you testified -- well, I don't know that you testified, but we've heard from other witnesses that AdWords displays -- displays

advertisements in its response to user queries; is that right?

A. That's right, on google.com.

Q. Well, where are all those ads stored?

A. We have a system called the ads database, which is essentially a bunch of computers that keep track of all the ads. It's like a big list of ads.

Q. Okay. And how many ads approximately are in the ads database?

A. It's on the order of billions.

Q. And how often is that database updated?

A. It's updated -- it's being updated all the time. We constantly have advertisers come to the site and adjusting their bids, how much they're willing to pay for a click, maybe changing the look of their ad a little bit. So it's updated about 5,000 times every second.

Q. I'm sorry. Did you say every second?

A. Yes, 5,000 times a second.

Q. Now, if there are two users in different states entering the same search query at the same time, are they going to necessarily see the same ads?

A. No.

Q. What about the same user entering a search query in, you know, a minute apart, would they see the

same ads?

A. Not necessarily, no.

Q. Why -- why is that?

A. So there are actually a whole lot of different possible reasons, because the ad system is -- it's big and it's complicated. There are a lot of subsystems. So one of the reasons could be that one of those 5,000 changes that I talked about is one of the advertisers stopped advertising. Maybe a new advertiser started advertising. And there's a new thing to show up a few minutes later.

There are a few other reasons. Maybe somebody only has a dollar budget for a day and spent it all, and then we're not going to show their ads until the next day.

There are -- there are more. There's the SmartAds system, which is constantly changing, and it may give a different prediction, but -- yeah, it's a big system, and there are several reasons.

Q. Okay. Now, is it possible to predict with any degree of certainty what ads would be returned to a given user at any given time?

A. Not any kind of high degree of certainty, no.

Q. Okay. And is it possible to predict with any kind of certainty whether a specific ad will be returned

in response to a specific query at any given time?

A. You could put me in front of my computer at Google and give me an hour, and I still wouldn't be close to being able to figure it out.

Q. Okay. Now, we've heard a little bit at this trial about a system called the AdMixer. What does the AdMixer do?

A. So broadly speaking, the AdMixer is a -- it's essentially a computer that's going to get a request from a machine called the Google web server.

It's going to do a bunch of work, which I can get into it in more detail, if you like, and then it's going to return some ads. So it gets a query, does a bunch of work, and then returns some ads for that query.

Q. Okay. Well, let's talk a little bit about that work, but, you know, keep it at a relatively high level.

What is the first thing that happens -- that happens in the process in the AdMixer?

A. Sure. So -- and like you said, I'll keep it at a high level, because there are lots of little steps, and I'll try to do the big ones.

So the first thing that will happen is that the AdMixer gets the request and then pretty much right away sends it off to another server.

What this other server will do is, it will take the query and try to come up with some appropriate keywords for that query.

Q. Can you give an example of what that might be?

A. Sure.

So supposing I were to search for basketball shoes, then there are a few different keywords that might be -- that might give reasonable ads.

For example, basketball shoes would be a good keyword. Basketball on its own would be a good keyword. Basketball sneakers. Just shoes on its own. Maybe Air Jordans.

So it's like a brainstorming session that this computer has within itself. It's trying to -- itself trying to come up with a lot of good ideas for the sort of product that the user might be looking for.

Q. Now, are the queries compared to a set of keywords?

A. No.

Q. And why do you say that?

A. So -- so we start with a query, and then we make a bunch of keywords, but then when you've made them, there they are. There's no need to compare anything to anything else.

Q. Okay. And the process that you just

mentioned, does that actually take place within the -- the AdMixer?

A. No. It's in a separate server.

Q. And what is that called?

A. I believe it's called the Q Rewrite Server, though -- I -- I think that's what it's called, but I'm not certain.

Q. Well, what's the next step?

A. Okay. So we've got the keywords.

The next step is the server, which I think is called the Q Rewrite Server. It takes those keywords and passes them off to another group of servers.

Now, what these other servers do is they -- they'll look up each of the keywords in a big table, and each of the keywords has a list of ads. So this other server, its job is to get the keywords in and to come back with the ads that were in this table.

Q. And does that process that you just talked about, does that happen in the AdMixer?

A. No.

Q. And where does that happen?

A. That happens in a service called Keyword Servers.

Q. Okay. And are the -- are keywords compared with the ads in that process?

A. No.

Q. What -- what's the next process kind of at the high level?

A. So at this point, we've -- so we started off with a query. Then we made some keywords. Then we looked up some ads. Now we're going to take those ads and send them back to the AdMixer, which is sort of the nerve center of this whole business. And the AdMixer is going to send the query and all those ads off to the SmartAd Selection System.

Q. Now, the SmartAd Selection System, I think you testified earlier that that's your main focus at Google?

A. Yes.

Q. And are there -- how many other people are there at Google on the ads quality team that are focused on SmartAds?

A. So within the particular part of SmartAds that I work on, I would say around 15, but there are -- there are others who work on different aspects of SmartAds, so maybe a total of 30.

Q. And can you tell us, just at a high level, what the SmartAd system is?

A. Sure. So the SmartAd system's job is to take this query and this group of ads that it was given, and for each of the ads, it guesses where -- guesses is the

wrong word -- it predicts how likely the user is to click on that ad.

So we've got this list of several ads, and for each one, we want to know, if we showed this ad to the user, how likely is the user to like it, to click on it and go to the website.

Q. Okay. And why does Google try to predict how likely it is that someone would click on an ad?

A. Well, there are a couple of reasons for that. So one of the important things about Google is that we try not to show anything to you that's useless to you, and if we're going to show you an ad that you're not going to click on, then that's -- that's no good for anybody. That's not good for the person doing the search.

And the other reason is that that's how we make our money. Google makes a lot of money from people clicking on ads. And if we're going to show you an ad that you're not going to click on, we're not going to make any money off of that. So we want to pick the best ads.

Q. Now, how does SmartAds predict how likely it is that a user is going to click on an ad?

A. That's also a pretty broad question.

So we have -- we have records from the past

few years of -- whenever somebody comes to the Google website and types in a query, and they see some search results and they see some ads, we have records of people having done that, and then when they see the page, they either click on the ads or they don't click on the ads.

So we've got hundreds of billions, which is really just a lot of data -- we have hundreds of billions of instances of people coming to the site. They click on an ad or they don't click on an ad. And so the -- we have a system called the SmartAds training system whose job it is to look at this data and to build a picture of what makes people want to click, what makes people not want to click. So it sort of builds what's called the machine learning model of what causes clicks.

Q. Okay. And so is -- what's the volume of information that this training model is accessing?

A. So, again, it's on the order of a few hundred billion visits to the Google website.

Q. Okay. And does Google look at all those billions of prior looks at the website every single time somebody responds to a -- or that every time somebody makes a search?

A. No.

Q. And so when does that process take place?

A. The process takes place -- the term we use for it is it happens offline. It sort of happens off to the side. We've always got these computers, this SmartAds training system, looking at all of this old data and doing its machine learning thing, and that's just sort of happening off to the side.

And we gather some statistics and check them over somewhere else, and that's what we use for the -- for the live queries.

Q. Okay. And so why is it that you're not looking back at the billions of prior instances every time that somebody's doing a search?

A. Well -- well, it might be nice to be able to do that. It takes time. So even for the fastest computer in the world, looking at a billion things is something that takes time.

When the user issues a query on Google, we try to get a response back from the ad system in about a tenth of a second. And a tenth of a second is fast, fast, fast. And even for a computer, there's only so much you can do, and a hundred billion things is too much.

Q. Okay. And so -- so when -- we talked earlier about the AdMixer will give kind of a set of ads to SmartAds. What does SmartAds do then when it gets the

candidate set of ads and is actually responding to the query?

A. Okay. So we're back in the query here, and we've got this set of ads in this query coming to SmartAds.

Now, for each of those ads, the SmartAd system will generate something called Google attributes, which are collections of facts about the query and about the ad.

Q. Okay. And what are the attributes -- you mentioned some facts. What are the attributes made of? Is there a name for that?

A. Yes.

So the facts themselves are called Google features. So let me give an example.

[redacted]

REDACTED BY ORDER OF THE COURT

[redacted]

So they -- that's what I mean by features or by facts. This is sort of one thing that's true about the -- about the query or about the ad or about the combination of the two.

Q. Okay. And so we have the attributes. Now, what happens next?

A. Okay. So we've got these attributes, and for each of the -- for each of the ads, we have about 30 of these attributes, these collections of facts. And each one of these attributes corresponds to a number, okay?

REDACTED BY ORDER OF THE COURT

That has a number associated with it called an odds multiplier, and the next step is that we go look up that number in a table.

Q. And where do the numbers in the table come from?

A. They were calculated earlier by the SmartAds training system.

Q. Okay. And how many odds multipliers are there?

A. Well, so for any one query, you would get about 30 of these things -- excuse me -- for any one ad, you will get about 30 of these things. The total number the odds multipliers of the SmartAds system computes -- the training system computes is maybe a billion or maybe hundreds of millions of attributes.

So it's got a lot of data to play with, and it's got a lot of variables to play with, too.

Q. And does any one multiplier mean anything in isolation?

A. Not really.

So the -- what this SmartAd system is designed to do is, it's designed to make good predictions, right? We've got this system, and the whole point is to get in a query and a bunch of ads and to come up with a number. So what we want out of the SmartAd system is, we want that number to be as good as possible.

Now, that number is -- is the -- anyway, the product of 30 other numbers, but we don't so much care that those individual numbers make a lot of sense. And in a lot of cases, they don't.

You know, I sort of look at these things and think, well, where did that come from and eventually stop asking the question. It's -- yeah.

Q. Okay. Well, so now -- now we've got the query; we have candidate ads, and there's a bunch of numbers pulled from the table.

What do you do next?

A. We take all those numbers, which, again, are these things that we called odds multipliers, and we just multiply them all together. This is going to give us -- that's going to give us another number.

We do a little bit of math on that, and we come up with a number we call the predicted clickthrough rate, which is like a percentage chance that we think

the user is going to click on the ad.

Q. And once you have the predicted clickthrough rate, what does Google do next?

A. So -- so this is where the SmartAd system ends. SmartAds is done when it returns the predicted clickthrough rate.

After that, we run an auction. So we take the ads. We take the prediction for each ad. We multiply that number, that percentage chance that we think the user is going to click with, and we multiply it by the bid, which is how much the advertiser said he or she was willing to pay.

So if I have a 10 percent chance of being clicked on -- if I'm an ad, and I have a 10 percent chance of being clicked on, and my advertiser is willing to bid $1, then I multiply those two numbers together, and I get .1, and that's like a -- that's like a score for this ad.

And we're going to take all the ads and rank them against each other. The ones with the highest score will be shown first, and the ones with the second highest score will be shown second and so on and so forth.

Q. And just to be clear, the score that you're referring to, is that -- how is that calculated?

A. We take the percentage chance that the user will click on the ad, and we multiply it by bid of the advertiser, the amount they were willing to pay.

Q. Okay. So it's not just a clickthrough -- predicted clickthrough rate?

A. No.

Q. Okay. Going back just real quick to the calculation of the predicted clickthrough rate, you mentioned that sometimes you don't really understand, you know, where these -- how these multipliers -- you know, where they come from, and sometimes they don't make sense.

Is it always the case that a match that would be in an attribute would necessarily lead to a higher predicted -- or a higher multiplier?

A. Well, in general, when you talk about SmartASS -- SmartAds doesn't have predictability in the way that you've described. So I think trying to say that any multiplier is going to be predictably higher than any other kind of multiplier is not going to work.

Q. So can the -- could it be the case that a multiplier could be higher when there's a mismatch than a match?

A. Absolutely, yes.

Q. Okay. And does that -- how often -- does that

happen often in practice?

[redacted]

REDACTED BY ORDER OF THE COURT

Q. All right. Why don't we --

MR. PERLSON: Can we show Demonstrative 251, please.

[redacted]

[redacted]

REDACTED BY ORDER OF THE COURT

[redacted]

MR. PERLSON: You can take that down. Thanks.

Q. (By Mr. Perlson) Mr. Furrow, I'd like to switch subjects for a few minutes.

So when the final predicted clickthrough rate is calculated, what kind of mathematical -- or form is it in?

A. It's a probability.

Q. Okay. And when you say a probability, what is that?

A. It's like a percentage chance. If I had a probability of .1, that would correspond to a 10 percent

chance that I think something is going to happen.

Q. Okay. And does it -- is it -- is it always a probability, or is it something before it's a probability?

A. Before we -- before it's a probability, it was an odds, and we converted it from -- converted it from an odds into a probability.

Q. Okay. And why do you do that?

A. Well, so -- I mean, essentially, at first, it was in this -- it's all just kind of numbers, so at first, it's in this form that we found convenient for earlier, in this odds form, because we had these odds multipliers, so it made sense to work with odds.

And then towards the end, once SmartAds is done with it, we're going to need probabilities, because we're going to run this auction that we talked about earlier where we multiply the -- the probability by a bid. And for that, we need a probability.

Q. Okay.

MR. PERLSON: Can you show Demonstrative 250, please.

Q. (By Mr. Perlson) And is this the formula for making that probability?

A. Yes. If you start with the odds and perform that calculation, you'll get a probability.

Q. Okay. And is 1 plus odds that -- on the bottom there, is that -- is that the highest maximum possible odds in SmartAds?

A. No. There is no maximum possible odds in SmartASS (sic).

Q. What do you mean?

A. Well, your odds can be as high as you like. You could have 2-to-1 odds, 3-to-1 odds, 4-to-1 odds, 1,000-to-1 odds. It's -- it can get very, very high.

Q. And does SmartAds ever need to normalize the predicted clickthrough rate?

A. No.

Q. Okay. And does SmartAds ever actually compare a predicted clickthrough rate to another predicted clickthrough rate?

A. No.

Q. Okay. And I think we spoke before that AdWords, when it's actually deciding which ads to display, is it right that it doesn't order the ads based on predicted clickthrough rate?

A. That's right. It orders them based on the score that we talked about earlier.

Q. Okay.

MR. PERLSON: You can take that down. Thanks.

Q. (By Mr. Person) Once again, I just want to -- a couple more subjects.

We've heard a little bit in this case regarding ad spam. Are you familiar with ad spam?

A. Yes.

Q. Okay. And are you a member of the ad spam team at Google?

A. No.

Q. Okay. So how is it that you know about ad spam?

A. The ad spam team works sort of alongside the ads quality team, and the work they do is important to the work that we do. So it sort of makes sense for everybody on ads quality to know a certain amount about ad spam.

Q. Okay. And so can you explain to the jury, just at a high level, what ad spam is?

A. Sure.

So ad spam is essentially when somebody goes to the Google website and tries to trick the ad system in one way or another.

For example, if -- you could go to the Google website and issue a query and click on the first ad ten times, and obviously, you weren't intending to buy anything; obviously, you didn't really care that much

about the website it was going to; you were probably just trying to cost them some money.

So that's an example of ad spam.

Q. Do you know what impression spam is?

A. Yes.

Q. And what's that?

A. So the -- impression spam is -- it's a bit like what I described. It's like when, again, somebody is trying to trick the ad system.

And what they do is they come to the Google website, and they show a query, and they see an ad for that query. Then they issue a whole -- that query a whole lot more times. This is an example, but, generally, this is how it works.

They'll issue the same query a whole lot more times. And what they're hoping to do is they're hoping to trick the SmartAds, which we were talking about earlier, into thinking that nobody likes this ad.

Earlier we were talking about how the SmartAds prediction is important, and it's generally nice if you have a high predicted -- a high prediction.

So if I have a competitor who's doing -- who's in the same business as me, maybe I want SmartAds to think that no one likes their ad, and so it should get a low prediction.

So I would go to the site, do a bunch of searches, and try to trick SmartAds.

Q. Now, does AdWords use any filters to figure out if there's been impression spam?

A. Yes. There are a number of automated helpers.

Q. Okay. And in the process of that -- in determining whether there's impression spam, are there -- are any individual messages ever flagged as needing to be reviewed?

A. You would never see -- are we talking here about human review or about the filters, or what are we talking about here?

Q. Well, we can -- other instances in which a human might be called in relation to impression spam?

A. Yes, there are. Sometimes a human will be called upon to take some action of an impression spam.

Q. Okay. So let's talk about in that instance.

A. Okay. So the question, I think, was, would an individual query ever cause impression spam to be looked at by a human, and the answer is no. You need a big pattern of a lot of queries.

Q. And why is that?

A. Well, we get an awful lot of queries for one thing. Essentially, I think that's it. If we had a human look at every query, then we'd need every human on

the planet to be doing it.

Q. Would you be able to figure out if there was impression spam from a single query?

A. I -- I don't believe so, no.

Q. Now, let's move on to one more -- while we're talking about humans, does Google ever need human assistance to respond to a query?

A. No.

Q. Okay. Are ads the only part of a response to a query?

A. No, they aren't. There are always search results.

Q. Okay. And is there always a response of some kind in response to a query?

A. Yes, there is.

Q. And is that response always automatic?

A. Yes.

Q. And is that true even when there are no ads to show?

A. Yes.

Q. Okay.

MR. PERLSON: No further questions, Your Honor.

THE COURT: All right.

Cross-examination.

CROSS-EXAMINATION

BY MR. FENSTER:

Q. Good afternoon, Mr. Furrow.

A. Mr. Fenster.

Q. Nice to see you again. It really is. Welcome to Marshall.

MR. FENSTER: We met once before at his deposition.

Q. (By Mr. Fenster) Is that right, Mr. Furrow?

A. It is indeed.

Q. And that was in Northern California?

A. Yes.

Q. Okay. So, Mr. Furrow, Mr. Perlson, on direct examination, asked you if AdWords always serves the same ad, correct?

A. Yes.

Q. Right. And you testified there that AdWords makes about 5,000 changes to the database per day?

A. No. Per second.

Q. Per second. Right.

And so it doesn't serve the same ads each time, right?

A. That's correct.

Q. Okay. And I'm going to put up on the screen DX Demo 379. This is one of Google's slides, I think

they -- Google used to try to make a point that it's not the same ads each time.

Now --

MR. PERLSON: Just for the record, I don't think we've actually used this slide yet, but we may later on.

Go ahead.

THE COURT: Go ahead and ask him about it.

MR. FENSTER: Thank you, Your Honor.

Q. (By Mr. Fenster) So this is a slide that shows two different search results performed four seconds apart; is that right?

A. Two different queries four seconds apart.

Q. Thank you.

And the query was for Las Vegas? Can you read that?

A. Yes.

Q. Okay. And what is highlighted here is one individual ad that was responded -- or that was served in response to this query, right?

A. Yes.

Q. And that's pulled out here?

A. As far as I can tell, yes.

Q. And this ad was -- was served when the

response was submitted four seconds later, right?

A. Yes.

Q. Okay. And I --

A. I assume it's four seconds later. I didn't do it myself.

Q. So now, when -- what happens -- strike that.

When the user types in Las Vegas and presses enter, Google receives an http message, correct?

A. Well, during that process, Google might receive several http messages, but yes.

Q. Okay. And after Google receives -- after the user presses enter after entering Las Vegas, this ad gets served, correct?

A. That's correct. Can I -- can I just add one thing? I --

Q. Actually, you'll get a chance to --

A. Sure.

Q. Mr. Perlson can ask you anything he wants, but -- because my time is limited.

A. I understand.

Q. Thank you very much.

So -- now, each of these ads that are served come from a database, correct?

A. That's correct.

Q. And they're in an ads database; is that right?

A. That's the name for the database, yes.

Q. And in order to put them on this page, Google has to retrieve them from the ads database, correct?

A. Yes.

Q. And so isn't it true, Mr. Furrow, that in order for Google to retrieve that ad from the database, it has to already be in the database?

A. Yes.

Q. Okay. And it has to be in the database before the user presses enter for that particular search, correct?

A. Pretty much, yes.

Q. Okay. Now, I want to switch topics a little bit.

And I don't know -- I don't know that you've sat through the trial, but Google has suggested in this trial that it's not a case-based reasoning system, that instead, it's a table lookup system.

And I'm going to show you one demonstrative that Defendants have prepared, and that's Defendants' DX Demo 351. And this is a comparison of a case-based knowledge engine and a table lookup.

Now, Mr. Furrow, isn't it true that the Google AdWords system is not just a table lookup?

A. The whole AdWords as a whole --

Q. Yes.
A. -- is not just a table lookup, that's correct.
Q. In fact, Google compares a lot of information from the search request message with the information it has about the ads, correct?
A. I don't think I would -- and the short answer is no. I don't think I would use the term compare.
Q. You use it -- you're right. I recall your distinction during the deposition, and I think you were more comfortable with the language that the AdWords system uses a lot of information about the search -- about the query and a lot of information that it has about the ads, right?
A. Sure. That's a fair statement.
Q. Okay. And in fact, Google AdWords generates attributes using attribute templates?
A. That's right.
Q. And --
A. The SmartAds system specifically does that.
Q. Right. And the attribute templates are made up of feature templates?
A. Yes, sir.
Q. Right. And the feature templates are then used to generate features about both the query, the ad, or both, right?

A. Yes.

Q. Okay. And when Google AdWords generates a feature using a feature template, it's identifying a fact about the query of the ad or both, right?

A. Yes.

Q. Now, let's talk about how Google flags attributes in -- in -- in the AdWords system.

So the google.com ad serving system identifies features of the candidate ads, correct?

A. Yes.

Q. And the features of the candidate ads are independent of the advertisement being considered, right?

Let me --

A. No.

Q. I may have misstated that.

The features relate to information other than -- or can include information other than the text or the ad itself, correct?

A. This is features about the advertisement, you're talking about?

Q. Yes.

A. Yes.

Q. And the features about the query can relate to data other than the query text itself, correct?

A. That's correct.

Q. Now, the attributes are defined in a particular source code file that you told me about?

A. They're in a particular file, yes.

Q. Right. And that file --

MR. FENSTER: Your Honor, this is something that has been identified as confidential. It's in evidence. If I can approach, I won't show it to the jury, so we don't need to clear --

THE COURT: Identify it for counsel.

MR. FENSTER: Sure. It's Exhibit 406.

May I approach, Your Honor?

THE COURT: Yes.

A. Thank you.

Q. (By Mr. Fenster) And, Mr. Furrow, do you identify -- do you recognize what is -- has been marked as Plaintiff's Exhibit 406?

A. Yes, I do.

Q. Okay. And this is a source code file that you identified for me during your deposition?

A. The term source code is a little misleading, but that's a technicality, so basically yes.

Q. And this is the file within AdWords' code that defines the complete list of attributes and features that are currently used in the AdWords system, correct?

A. Yes, that's correct.
Q. All right. Thank you.
Now, I'd like to switch topics a little bit.
And you testified that there are some -- over two billion ads in the ads database, right?
A. Yes, that's right.
Q. Okay. And a much smaller portion of those get passed down to the SmartAds box here, right?
A. That's right.
Q. And isn't it true, Mr. Furrow, that Google calculates a PCTR score for every ad that's evaluate -- that's evaluated in the SmartAds server?
A. Yes. Some of the ads that were passed to SmartAds, all of them are evaluated and given a predicted clickthrough rate, yes.
Q. Now, I want to ask you one question about the SmartAd server -- about the PCTR scores that are used.
Now, the PCTR scores, that's a probability clickthrough rate?
A. That's correct.
Q. Or a probable clickthrough rate?
A. Predicted.
Q. Predicted.
And is that described as a probability?
A. Yes, it is.

Q. Okay. And as a probability, it's -- it's a -- it has a value of between 0 and 1; is that correct?

A. That's correct.

Q. All right. I'd like to show you a slide that was used during opening, in Google's opening in the case. It's DX324 (sic). Can you see that okay?

A. Yes.

Q. Have you seen this before?

A. Yes.

Q. Okay. And over here on the left, it says PCTR percentage?

A. Yes.

Q. Now, the PCTR is always expressed as a value 0 to 1?

A. That's a probability, yes.

Q. What's a PCTR percentage?

A. I suspect they didn't want to put the percent sign in the little circles, so the 2.9 would be 2.9 percent, which is .029.

Q. I see.

A. So it's just another way of writing the PCTR.

Q. Okay. So the PCTR is never over 1, as indicated here, correct?

A. I don't think it's indicated -- I think I disagree with your premise. It is never over 1. This

indicates PCTRs that are not over 1.

Q. Okay. So to the -- so the jury shouldn't be confused. The PCTR is never a value over 1, right?

A. That's right. You can imagine little percent signs next to each of those PCTRs.

Q. Okay. So if this were expressed as a PCTR, it would be?

A. .029, .014, .035, .071, and .094.

Q. Great. Thank you very much.

Now, you said on direct that Google always automatically serves a response, correct, in response to every query?

A. If you want to be very technical, there might be a machine failure somewhere, but certainly we always try to send a response.

Q. Right. Now, Google doesn't always serve ads, correct?

A. That's correct.

Q. In fact, it has to determine whether or not any ads make it through the system and are good enough to serve, correct?

A. Part of the system is making that determination.

Q. Right. And if the system determines that there are no ads that are good enough to serve, it

doesn't serve any ads, correct?

A. That's correct.

Q. The only thing that will -- that will get served are search results, native search results, correct?

A. Yes.

Q. Which have nothing to do with this case, right?

A. I believe you.

Q. Okay. So -- and if -- but if Google does determine that there are some ads that it deems good enough to serve in response to a query, then it will serve those ads, correct?

A. Yes, it will.

Q. All right. Now, I'd like to talk about -- talk to you about the classifying step, what is the classifying step in this case, and what Mr. Perlson talked to you about with respect to the ad spam.

MR. FENSTER: Your Honor, may I approach? I have a question.

THE COURT: Yes.

(Bench conference.)

MR. FENSTER: Thank you, Your Honor.

Your Honor -- Your Honor, in light of the Court's ruling with respect to claim construction, I was

wondering if you could clarify or instruct the jury that 28(b1)(ii) doesn't have to be performed in order. That would be in context to both this witness' testimony and the next witness' testimony.

THE COURT: Well, I'm going to give instructions about that at the end of the case. Take whatever testimony from him that you'd like, but I'm not going to --

MR. FENSTER: Very well, Your Honor.

THE COURT: -- I'm not going to start giving interim claim constructions.

(Bench conference.)

Q. (By Mr. Fenster) So, Mr. Furrow, the next line of questioning that I'm going to ask you about relates to the ad spam and the impression spam that Mr. Perlson asked you about.

And one of the steps in the Rice patent that's at issue here is the classifying step of 28(b1) which requires classifying the electronic message as at least one of ... requiring assistance from a human operator.

Now, there are circumstance under which a human might be called upon to review a large volume of traffic that's suspected as spam, correct?

A. That's right.

Q. And, in fact, Google uses an automated process

to determine whether something looks funny to the system, sufficient enough to tag it for human review, right?

A. That's right, yes.

Q. And a reasonable summary of this process is that one of the circumstances that would trigger human review by -- at Google is if the automated systems detected a funny pattern with one of Google's partners; is that right?

A. That's fair to say, yes.

Q. Okay. And if Google's software detected something funny or a funny pattern, then that would trigger a human intervention or a human to get involved on behalf of Google, correct?

A. That's right, yes.

Q. Now, Google's automated system also flags something for human review when it notices other funny things like odd patterns of traffic, correct?

A. I -- I guess I don't -- yes. Odd patterns of traffic could do that.

Q. And there are two ways that Google flags something for human review, right?

A. You're going to have to name them. I'm sorry.

Q. Do you remember during your deposition, you told me that one way that Google flags something for

human review is to put it in a queue for humans to look at?

A. Okay. Yeah. Now I remember. Yes.

So it might put it in a queue for humans to look at, which is like a website with a list of things that somebody needs to look at. But under more extreme circumstances, it might send an e-mail saying: Look at this right now.

Q. That's right.

And at your deposition, you called the humans Googlers, right?

A. I think so.

Q. That's right.

All right. Thanks very much.

MR. FENSTER: No further questions.

THE COURT: Redirect, Mr. Perlson?

MR. PERLSON: If you please, Your Honor.

REDIRECT EXAMINATION

BY MR. PERLSON:

Q. Mr. Furrow, I just have a few more questions for you.

MR. PERLSON: Can you pull up DX351, please, Ryan.

Q. (By Mr. Perlson) Now, Mr. Fenster showed you this slide here. Have you ever seen this before?

A. Yes.

Q. Okay. And did -- there's a case-based knowledge engine on the left and a table lookup on the right.

And now, during your work at Google, have you ever heard anyone referred to the way that Google returns ads is using a case-based knowledge engine?

A. I had not heard the term case-based before this case, and I hadn't heard the term knowledge engine either.

Q. Okay. And have you ever seen any documents at Google that ever mention case-based knowledge engine?

A. No.

Q. And have -- to your knowledge, is there any training as to how to use a case-based knowledge engine in connection with working with AdWords?

A. No.

Q. Okay.

MR. PERLSON: If you could pull up 324, please.

(Pause in proceedings.)

MR. PERLSON: Well, it looks like we're experiencing some technical difficulties.

Q. (By Mr. Perlson) I'll just ask you. There was a -- there was a slide up here that had different parts

of the ad serving system. It had the AdMixer and then had SmartAds and then a few other things.

And Mr. Fenster had asked you whether -- in SmartAds, whether there was scores assigned for each of the ads -- set of candidate ads that are considered by SmartAds.

A. I recall that, yes.

Q. Yeah. And as you said on direct, you said that those ads were scored, right?

A. Yes.

Q. Now, are all the ads that are considered in the AdMixer scored?

A. No.

Q. And, again, how many ads are in the -- on the ads database?

A. In the ads database, there are billions and billions of ads.

Q. Okay. So would it even be possible to score all the ads in the ads database and the AdMixer in a short period of time?

A. If you had a million computers maybe, but we don't have a million computers doing this, so no.

Q. Pretty close, but not -- not quite there yet?

A. Not quite.

Q. Okay. Now, Mr. Fenster also asked you --

MR. PERLSON: You can take that down.

Q. (By Mr. Perlson) -- whether -- if there were any -- if there were not any ads, were there not any ads shown.

I'm sorry. If the -- if the ad serving system decided not to show any ads, that it wouldn't show any ads or search results, right?

A. Right.

Q. Okay. But does the user not get a response in that instance?

A. The user does get a response. The user will see a page full of search results. And there just won't be any ads on that page.

Q. And that's always true?

A. Well, sometimes we don't have any search results. So if somebody searches for something, you know, he just bangs on the keyboard and hits enter, we probably won't have any search results for that or any ads.

In that case, the user would still see a page; it would just say: Sorry, we couldn't find anything.

Q. So it still gets a -- the user would still get a response?

A. Yes, absolutely.

Q. And that response would come automatically?

A. Yes.

Q. Okay.

MR. PERLSON: I have no further questions, Your Honor.

THE COURT: Additional cross-examination?

MR. FENSTER: One minute, Your Honor.

(Pause in proceedings.)

MR. FENSTER: No further questions.

THE COURT: May this witness be finally excused?

MR. FENSTER: Yes, Your Honor.

THE COURT: Any objection?

MR. PERLSON: Yes, that's fine with us.

THE COURT: Travel safely back to Northern California.

THE WITNESS: Thank you.

THE COURT: Thank for being here.

THE WITNESS: Thanks for having me.

THE COURT: Who will be your next witness?

MR. PERLSON: Your Honor, we'd be calling Dr. Edward Fox next.

THE COURT: Was this witness previously sworn?

MR. PERLSON: I believe so.

THE COURT: Okay. All right. Come around, Dr. Fox, and have a seat.

MR. PERLSON: May I proceed, Your Honor?

THE COURT: Yes, please.

MR. PERLSON: Okay.

EDWARD FOX, Ph.D., DEFENDANTS' WITNESS, PREVIOUSLY SWORN

DIRECT EXAMINATION

BY MR. PERLSON:

Q. Good afternoon, Dr. Fox.

Would you please tell us your full name.

A. My full name is Edward Alan Fox.

Q. And where do you live, Dr. Fox?

A. I live in a town, about the same size as Marshall, about 30,000 people. It's Boksburg, Virginia.

Q. Okay. And can you tell us a little bit about yourself.

A. Yes. I'm 60 years old. I've been happily married since 1971. My wife and I have four sons. My oldest is 35 today. My youngest is -- are twins, actually. They're 25. And we have three grandsons, age 1 through 3.

Q. And what do you do for a living, Dr. Fox?

A. Since 1983, I've been a professor in the Department of Computer Science at Virginia Tech.

Q. And what area of -- is there any particular

area of computer science you specialize in at Virginia Tech?

A. I cover and work with all aspects of managing information, especially information retrieval, but also including the field of digital libraries.

I also work with knowledge. I teach a course to freshmen called introduction to living in a knowledge society, so people will be prepared to live in a world where we have these kinds of knowledge systems and are aware of computing.

I also teach courses for seniors about information and the web and multimedia.

And I teach courses for graduate students specializing in information retrieval.

Q. Okay.

MR. PERLSON: Can you pull up 301, please.

Q. (By Mr. Perlson) Now, Dr. Fox, this is the -- Dr. Fox, this is the first page of your multipage CV, but I just want to talk a little bit about your experience in computers.

When did you first start working with computers?

A. In the -- 1965, I started taking courses on Saturdays while I was in high school at Columbia

University to learn about computer programming.

Q. And did you study more after that?

A. Yes. I was hooked, and so I decided to do that for my career. It was hard to find, back then, places that taught computer science, so I went to the Massachusetts Institute of Technology or MIT in 1967. There weren't any computer science departments back then there, so I majored in electrical engineering, but I was the first group of students who could focus on computer science as part of their electrical engineering background.

Q. And so are you a computer scientist?

A. Yes, I am a computer scientist.

Q. Okay. And what did you do after studying at MIT?

A. I got married in 1971, and my wife and I lived for seven years in South Carolina in the Florence area. For the first year, I taught in a two-year college like the one just down the road that I keep driving by, and then I spent six years managing the computing operations at a steel joist manufacturing plant run by Vulcraft. It's -- has a sister plant in Grapeland, Texas, not far.

Q. Have you worked outside the academic world after your time at Vulcraft?

A. Yes. From 1982 to 1983, my wife and our two

younger children at that stage went to Nigeria. I was employed by an international institute which is trying to solve the world food problems for the tropical areas of the world. I ran the computing operations, and I worked with the statistics people there.

Q. And did you at some point then have -- get a graduate degree?

A. From 1978 through 1983, I was working on my master's and my Ph.D. degrees at Cornell University.

Q. And why did you choose to go to Cornell?

A. When I was in my last years at MIT, I became interested in information, because they had some innovative systems for searching and doing this.

My undergraduate adviser worked in that area, and I wrote a bachelor's thesis -- I made use of a 1968 or '69 book by someone named Gerry Salton, and so I became intrigued in that, and when I decided to go to graduate school, I went to Cornell so I could work specifically with him. He's often known as the father of information retrieval.

Q. And did you get a degree from Cornell?

A. Two degrees. In 1981, a Master's of Science and Computer Science, and in 1983, a Ph.D. in computer science.

Q. Okay. You mentioned information retrieval.

Just -- can you give us a quick summary of what that is?

A. So it's really the topic that this case is all about. It's about finding things, retrieving things. We heard about search engines and searching and finding ads. So information retrieval is all about that.

For the last four years, I've been a senior member of the committee that's in charge of picking papers about the web and search engines and the advertisements. So I'm very, very involved in this kind of thing.

Q. And have you kept up in working in the information retrieval through any professional organizations?

A. Yes. I'm a member of, I guess, four or five different professional societies. Used to be a member of AAAI, which we heard about earlier in the case. But it got too expensive having so many different associations.

In 1967, I joined ACM, which is really the leading computer science society.

Later on, I joined the IEEE and the IEEE Computer Society, which I'm a senior member of.

Q. Do you have any leadership roles in any areas, any professional organizations regarding information retrieval?

A. I'm actually the executive director of a nonprofit -- this is a not-for-pay job, one of many that I do, which is called the Network Digital Library of Theses and Dissertations.

In 1987 through 1995, I was chair of the special interest group on information retrieval. It's part of ACM. It's the main group that's in charge of studying the field of information retrieval and running conferences in that area.

From 2004 to 2008, I was chair of a similar group that's run -- is part of the IEEE. It's the technical committee on digital libraries.

Q. Have you done any research in the field of information retrieval?

A. Yes. I've been very fortunate. It's very hard to get research funding, especially nowadays, when maybe one in ten proposals are actually funded by the sponsors.

Over the years, I've had over 110 research grants funded on lots of different projects, and so I've been very active in the research community. That's on the grant side.

Q. Have you published any -- anything in the -- involving your research?

A. Yes. I'm author or editor or co-involved in

that for 13 books. And if you count the book chapters separate from that and the journal papers and the conference papers, well over 300 publications like the ones that you saw that Amy Rice was involved in with the AAAI.

Q. And does any of the work relate to the issues in this case?

A. Most of it does, actually. It's very closely related, yes.

Q. And can you give a few examples?

A. Sure.

So over the years, I've built -- I think I would count 11 different search systems.

Starting in 1979, I built a search system called SMART. There had been one that my adviser had done some years ago when he was at Harvard, and I wanted to use it to do my doctoral research. So I led the development of that and did most of the coding of that system.

And over the years, I've built lots of other systems, still involved today in building those kinds of systems.

Q. Now, Dr. Fox, are you being paid for your time in this case?

A. I'm being paid at my normal hourly rate for

this case, yes.

Q. And what's that?

A. It's $400 per hour and $500 when I'm giving stressful testimony in Court like this or in depositions.

Q. And does your payment depend in any way on the outcome of this case?

A. Not in any way.

Q. Okay.

THE COURT: Just the level of stress.

[Laughter.]

MR. PERLSON: Your Honor, at this point, we'd like to move to qualify Dr. Fox as an expert in computer science.

MR. FENSTER: No objection.

THE COURT: The Court will hear his opinion.

MR. PERLSON: Your Honor, I'm about to shift. Do you want to --

THE COURT: Certainly.

Ladies and Gentlemen, we're going to take our afternoon break at this time. Take until 3:25, a little over 20 minutes. Remember my prior instructions, and don't talk about the case.

LAW CLERK: All rise.

(Jury out.)

THE COURT: All right. Have a seat.

I'm completely shifting gears.

On the Williams' documents that were handed up a couple of -- I guess after jury selection, Defendants' 348, 349, 430, and 999 are admitted.

347, which relates to the e-mail chain back and forth to Mr. Pridham, you need to approach the bench before you go into that.

Defendant's 1000, which I presume is a copy of Mr. Williams' article that was submitted to the San Francisco paper, the one that's going to be --

MR. PERLSON: That sounds right.

THE COURT: Well, it's artificial intelligence on the internet. You don't need to approach the bench before you go into that, but you need lay a foundation. I don't want to preadmit it because it's not --

MR. PERLSON: Got it.

THE COURT: But as near as I can tell, it's referred to in the e-mail chain of 999.

Yes, sir.

MR. FENSTER: Your Honor, in light of your ruling with respect to Dr. Fox and his opinion with non-interactive and his -- I think your ruling was, he

can testify that electronic message refers to e-mail in his definition, but he can't say it's limited to that.

In his report, Your Honor, his -- he used that as the definition. It was limited. And so any opinion other than that would be beyond the scope of his report.

He testified clearly in his deposition that that was the definition that he used in doing his non-interactive analysis, and so maybe it should be limited. I think anything beyond that would be -- anything other than that would be beyond his report.

THE COURT: What's the answer?

MR. PERLSON: Your Honor, I'm not -- we're not intending on providing any testimony from Dr. Fox that's inconsistent with the order that you issued.

The only thing that I might ask him is to refer to whether he heard what Dr. Rhyne said that he used in connection with an electronic message, which is a message that's electronic and whether -- and how he might apply that, and that's it.

I have no intention of -- he's not going to be testifying that Google search queries -- that non-interactive electronic message is limited to e-mail.

In no way is he going to testify as to

that.

THE COURT: Well --

MR. PERLSON: And I'm going to be eliciting --

THE COURT: -- he can -- he can testify, in his opinion, that Google search query is not an electronic message, but he can't say that it's not an electronic message because it's an e-mail, because an electronic message is limited to e-mail, okay?

MR. PERLSON: That's fine, and I don't think he ever offered that opinion.

THE COURT: Well, I -- just in light of when you got the order, I will let him give that opinion, if he can give it. I don't know what he's going to say, but we'll wait and see, okay?

MR. PERLSON: Thank you, Your Honor.

LAW CLERK: All rise.

(Recess.)

All rise.

(Jury in.)

THE COURT: Please be seated.

Continue.

MR. PERLSON: Can we play -- alright.

Q. (By Mr. Person) Dr. Fox, what's shown here up

on the screen?

A. This is a timeline of the technologies that relate to the field of information retrieval in connection with this case.

Q. And before we go into that, real quick, today we're going to be a tutorial of sorts.

Do you often do tutorials?

A. Yes. I've done one in Australia this year earlier. I'll be doing two others, one in Scotland and one in Philadelphia. And I've given over 70 in about 25 countries in the world.

Q. And when you do a tutorial, what's your approach?

A. My approach is to help people understand the terminology in the area, the related work, the kinds of systems that exist, and to give them lots of examples so -- so they will understand what's meant and internalize it and see how they can apply it in their situations.

Q. Let's just right into this one, and can you tell us -- first, why don't we go look at in the 1950s, you have artificial intelligence.

What does that refer to?

A. In about 1956, a bunch of people got together and launched this field, which is to make computers

smart, behave like people in knowledgeable ways.

There were people from MIT. My advisor is an undergraduate at MIT, Joseph Licklider, was known for his man/machine symbiosis. Not politically correct these days, but trying to get computers to work together with people and be more intelligent.

And he was in charge of the artificial intelligence laboratory at MIT that included famous people like Marvin Minsky and others. So this field is to make computers smart, and that can be done in ways like robots. It can be done in ways, as we're discussing here, of knowledge-based systems.

Q. Speaking of knowledge-based systems -- you have that there -- can you explain what that refers to?

A. So people in the AI field began to try and figure out how to do this in different situations. Even today, computers are nowhere as smart as people across all different domains.

And so people said let's take the knowledge of experts. I think you heard from Amy Rice talking about knowledge engineering. Going to a bank and trying to understand the kinds of things that they do there and try and put that into a system that would behave smart with certain things, like routing messages.

Q. And the next -- there are couple of prongs

under the knowledge engine. The first one is rule-based knowledge engine.

What is that?

A. Okay. So knowledge-based systems to get built, you have to have a knowledge engine, and you have to have a base of information, a collection of information.

So the first approach that took place around the beginning of the 1970s was to use collections and rules that have a set of different conditions and a set of actions associated with those. And the collection of those rules would be called a rule base. And a special program, a knowledge engine, would work on those things and produce the behavior that was desired.

Q. Okay. And the next prong there is a case-based knowledge engine.

What does that refer to?

A. So I started building these systems in the mid-1980s, and we had trouble with these rule bases, because as they got bigger, they started to conflict with each other. So it was a little bit like in a town, if you have a stop light on every street that gives you rules of when to stop and when to go, it turns out to be a real mess.

So instead of that, they would come up with

different cases, and that's what led to the case-based knowledge-engine-type systems, a different kind of system, but also part of this family of knowledge-based systems.

Q. Now, on here, we kind of go way back in time to the 18th century and mention statistics.

What is that doing on this chart?

A. Statistics is a -- is a branch of applied mathematics. Often, we hear about probability in statistics, and we've heard in this trial a number of times about probabilities.

So the question is, can we observe things and come up with averages. That's -- a simple kind of statistic that we know how to compute is the average behavior in a certain situation.

And statistics gets more complicated. I was fortunate when I was teaching at Virginia Tech to know I.J. Good, who just recently passed away, one of the very famous statisticians. He sat in on my information retrieval class. And his work connected statistics with the kind of information retrieval, among other people.

Q. So back in the 1700s, were they using computers for statistics?

A. They weren't using computers. They were using tables to look up things and formulas and equations, and

they would compute -- it was actually used a lot in agriculture. That was the main area where all the early work occurred in this field, like the kind of thing I was doing with people in Nigeria.

Q. Well, so you have an arrow going -- moving forward in time up into the 1990s, and then to text-machine learning and then also artificial intelligence goes down there, too.

What's the convergence there that you're referring to?

A. So I was one of the early people to try and use knowledge-based systems to see if we can solve the problems of information retrieval. And we tried that in a variety of different ways, as you see here.

I had students who built case-based systems and so forth, but it just didn't scale up. We couldn't handle big collections of things. They would just be too slow, and it would be too hard to build the knowledge into the systems, if you built the rule-based or the case-based.

And so over the years, people kind of abandoned that approach. And in the recent years, especially since about 1995, people have said if we're going to use artificial intelligence, we really need to use a technique called machine learning.

And since in this case we're talking about queries and messages, that's all about text. So it's a text machine learning situation.

Q. Now, Dr. Fox, what patent did you look at in connection with your work on this case?

A. I looked at the '947 patent, which we've heard about, and I see there on the screen the first page of that.

Q. Okay. And how did you study the '947 patent in connection with your work?

A. I read this patent over and over and over from front to back. I tried to understand all aspects of it, especially focusing on the claims at issue.

Q. And just real briefly, can you describe what the patent is just at a very general level?

A. Well, the title tells us some of this. It's automatic, so we're talking about typically computer systems. It's about messages and how they get interpreted. So, typically, you want to understand them in some fashion.

And it's about routing. We've heard about routing to the people, for example, as one option, if it can't be automatically handled.

Q. Now, Dr. Fox, were you retained as a technical expert in this case?

A. Yes, I was.

Q. Can you explain to the jury what your assignment was with respect to the infringement issues in this case?

A. Yes. My focus is purely on infringement, and infringement deals with really two things. It deals with the patent and the claims that are at issue and the accused systems. So I studied both of those.

Q. And -- and, Dr. Fox, are you a lawyer?

A. No, I'm not.

Q. Okay. And so in formulating your opinions in this case, were you given the rules of the road for patent infringement?

A. Yes, I was.

Q. And can you explain to the jury what your understanding is of those rules of the road?

A. Yes. So when an accused product is accused of infringing a claim or a set of claims, for each of those claims, the accused product has to do what that claim says. It has to satisfy all the limitations of that claim, every single one.

Q. Okay. And did you look at the claims in connection with your analysis of them?

A. Yes. There are five claims at issue which we see, and we've heard about them, so I don't think we

need to go through them in more detail right now.

Q. Okay. And were you instructed where you should look in order to determine the meaning of the claim terms?

A. Yes. There are lots of terms in these claims, different words, different phrases, and some of them have been construed. So the Court has construed a number of terms, which are shown on, I think, the three screens here.

Q. Yeah. We've heard these a bunch of times, and so we won't go through them right now. But after we talk further this afternoon, we'll mention them as we need to.

Now, real briefly, I'd like to walk through just an example from the '947 patent.

Can you start us off, first of all, by just explaining what's in this dotted box down on the right-hand corner?

A. Okay. This is Figure 1, which also appears on the cover of the patent and appears later on a full page, so it can be clearly seen.

In the description in the patent, the numbers that you see here are described, and the one that you've identified is -- see if I can use this gizmo here -- 30. That's attached to this big thing here on the -- on the

bottom, which is the rule-based and case-based knowledge system.

Q. Now, let's just kind of walk through a few of the steps from this example.

What's going on -- what's shown in this screen?

A. So the patent in this example explains one kind of use of what's being claimed. This is just an example. But it's going to help us understand. Examples are very useful.

So what we see here is sort of the first step. And I've only made, I think, four slides here, because it goes through lots of detail step-by-step.

But the first main part is that the person, the customer as shown here, working with a computer creates something, some electronic message. And you see the yellow line that goes from there down to this -- this path. And it goes into different computers and gets routed eventually to this thing here, which is the inbox, which is the entry into the computer system for automatic processing.

Q. Okay. Here's the next slide. What's happening here?

A. So this patent is about interpreting electronic messages. And so one way to do that, since

we have this thing on the bottom, this rule-based and case-based knowledge engine, one way to interpret the electronic messages is to use a rule-based knowledge engine. And that's what's shown in this bottom section here.

It's labeled as preprocessing. It does some of the first processing that relates to this electronic message. And it makes use -- because it has rules, there's the rule base, which is here, the set of rules, and also a set of actions that correspond with those rules.

Q. And then here's the next slide from the example. What's -- what's being shown here?

A. So the way that this example is explained, if the rule base is not sufficient to do all the work that's necessary for some of the messages, then it will use an alternative approach. It will make use of the results from the rule-based knowledge engine, but then it will use a case-based knowledge engine. And that's the part that's shown here on the bottom.

These two parts here (indicates). This is the case-based knowledge engine and the things that relate to it.

Q. And what does this example show in the bottom left?

I guess I'm going to try to use this, too.

A. Okay.

Q. There's a presented case model and a stored case model. What's that?

A. Right. So using the Court's claim construction about exemplar cases, there are examples of the kinds of things that the system should respond to. Those exemplar cases are stored.

And what we see here are models of those exemplar cases. That's the thing on the right-hand side, the stored case models.

After that's been done -- this is done by the knowledge engineers and others who are trying to prepare the system. After that's been done for a single person who's trying to have their needs met, their information needs satisfied, the electronic message that they provided will be processed, as we saw before, and that will lead to a presented case model. It has to be the same kind of thing, if you're going to make comparisons.

So we're going to see if we find an example or exemplar case that matches this presented case.

Q. And then what's shown in this slide?

A. So, ultimately, the person who's been patiently waiting for all of this wants something to happen, and there are two situations that it described

in -- in this example in the patent.

One case is where the computer system is able to figure out what to do. It has a set or an archive that's shown here of solutions, things that it can use for responses.

And if automatic processing has been identified as the right thing as possible, then the stuff that comes out of that goes back up, as you see the flow going upward, to the outbox, back to the different computers, and ultimately back to the customer.

Q. And then here we kind of have another flow. What's this showing?

A. Sometimes people's electronic messages are hard to interpret. I had a project, the naval message analyzer funded by the Navy, to try and figure out some of their messages, and they were pretty complicated.

So in some cases, those -- those messages are not interpretable by either the rule base or the case base, or maybe the rule base or case base will extract -- the rule base will extract some things from the message, like the address, that might be useful. That will get referred to the -- to the human being, the person who's going to provide a manual review. They will figure out what to do, and they will provide an

answer that eventually goes back to the customer

Q. Now, moving on to another subject, what's shown here?

A. This is the home page for Google. And as I have it in the heading on the top, I point out that Google provides a variety of services.

Just so people understand what's on the page here, I made arrows and have red boxes added to this to identify some of the services. Such as the one on the right is Gmail. The one sort of in the middle is Maps to help people find their way from place to place.

Q. Now, is it your understanding -- any of those services that you have pointed an arrow to, are any of them accused in this case?

A. No, they're not.

Q. Okay. And the search box there, what -- what do you do with that?

A. So when someone is involved in the information retrieval process, they have an information need. They want to find some kind of answer or get -- learn about something.

So they engage in a process, an interactive process with a computer system, which includes taking that need and sort of converting it to questions, to queries. So that's the box where people type in some

version of their information need, typically called a query.

Usually, they're very short; typically a couple of words. But you can make them longer, if you want.

Q. Now, is -- is it your understanding as to whether Google search is accused in this case?

A. It's not accused.

Q. Now, Dr. Fox, I'd like to jump right in to a discussion of some of the limitations here. We had Mr. Furrow walk us through a lot of technical details, so we can skip that.

Now, here -- what's being shown here?

A. So this is a list of phrases, concepts that are discussed in the claims that are at issue.

The first two relate to 26. The next two relate to 28. The following relates to 30. And we have a little bit there about 31. Also, the next one is about 31. The last one is about 33.

So these are key aspects or limitations that relate to all of the claims that we're discussing today.

Q. Now, you have on the top, Limitations Not Met. What does that mean?

A. So studying the patent and the claims and the Court's claim construction and applying the file history

and all the other things that I was to be made aware of and looking at all the information from Google -- I studied a lot about Google and its systems and lots of information behind that -- I reached some conclusions and opinions.

And each of these is one of the things that is a limitation in the claims that's not met by the accused products. There are other things, too, but I don't have a lot of time here, so I focused on the most important ones and the ones that were easier to explain in a short time.

Q. Okay. Just because something is not on this list doesn't mean that you agree that it's met in the Google system?

A. No. I go through every single one of the parts of all of the claims in 109 pages in my report and explain in detail why these things are not infringing, yes.

Q. And you mentioned briefly about the information from Google that you looked at, and I just think it's important for you to let the jury know kind of in a little bit more detail what it is that you looked at in connection with your analysis here.

Can we do that?

A. Okay. On the Google side of things, I have

gone through the depositions from all of the people who have been deposed from the side of Google. Of course, I've been in the courtroom the whole time here through the trial when all those kinds of things were being discussed. I've heard all of that.

I have done experiments with the system to see what it does with ads. I have applied my knowledge and experience. I actually met Larry Page, who founded Google when he was a graduate student at Stanford, and saw the very first demo of this back in -- I think the first demo was back in 1998.

So I've used my knowledge specifically about this case and also my prior knowledge.

Q. Well, let's jump right into non-interactive electronic messages.

You understand that this term has been construed by the Court in this case?

A. Yes. The heading there is the phrase that's been construed, and the bottom right is the -- is the text of that construal.

Q. And --

A. And on the left side is the corresponding words that you see on the top there.

Q. And can you read the Court's construction of non-interactive electronic message?

A. An electronic message in which the sender does not provide any additional information after the message has been received.

Q. And in your opinion, does -- does Google meet this limitation?

A. No.

Q. Does Google -- is there an electronic message in which the sender does not provide any additional information after the message has been received?

A. No.

Q. Let's talk about that in a little more detail. We have some slides here.

What's being shown on these slides?

A. So the technical details, I've studied the http protocol. I had research grants relating to this. I had papers published about this. There's actually a connection that's established that's kept open during the entire session where a person is interacting with the Google system.

So over that connection, lots of messages go back and forth. We call this interaction. So someone types something. You see here, every time a letter was typed, something came back. So that's a response

Q. Now, Dr. Rhyne, during his direct testimony, had indicated or perhaps it was cross -- I don't

remember which one -- indicated that he thought that an electronic message was a message that was electronic. And he indicated that he didn't think that this MAR would be an electronic message under that definition.

Do you agree with Dr. Rhyne?

A. I don't agree.

THE COURT: Yes?

MR. FENSTER: Beyond the scope of his report, Your Honor.

THE COURT: Overruled.

A. I don't agree.

Q. (By Mr. Perlson) And why is that?

A. In Dr. Rhyne's report, he has at least three different explanations of what an electronic message is, and so it's not clear to me which one to argue about. But I talked about each one of those explanations in my report.

He typically refers to an http message that goes from one to the other, and each one of those things I showed in this illustration actually is encoded using this http protocol and is sent from one system to the other, both the typed information going to the computer and the responses. Those are all http messages.

Q. And so leaving that interaction, let's talk about some others that a user may have encountered with

the Google system.

What's being shown here on this slide?

A. So this is one of the set of slides that show examples of different kinds of interaction. The first one is, since I'm not often able to spell words properly, if I typed the wrong kind of word -- I spelled cowboys wrong in this situation -- it comes back with a suggestion seeing if I agree with its correction of the spelling. Sometimes I don't get it right even then, and I have to try again.

Q. And what happens if you click on the Dallas Cowboys rather than the Dallas Cowboys with the I-S?

A. So if I click on that, then another message goes back to Google, and then it will try and deal with that as if that is what I was typing.

Q. Okay. What's being shown here?

A. Remember, I mentioned this is a search session. People are trying to get their information needs met. And so, typically, most people don't get it right the first time. They'll try and extend their query. They'll add words to it.

Here's an example of revising the query by adding another word.

Q. And let's jump to this one. What's being shown in this slide?

A. So Google works on the worldwide web, and so the purpose of the worldwide web is to let people go from place to place. If I click on that, I go to another page.

I may keep the screen up. I can actually do it in another window, so that stays up sometimes with what I'm doing. That other page will give me information about the Dallas Cowboys from their official website.

Q. If the user clicks on a search result, is that -- does Google get notified about that?

A. Yes. Google has to take care of this. They have to do something with it, yes.

Q. And is that information that's sent to Google?

A. Yes, it is.

Q. And on the right-hand side, there's -- there's ads?

A. Correct.

Q. And if a user would click on an ad, would Google know about that?

A. Yes. Those clicks lead to jumping to another page.

Q. And is that information sent to Google? It's a click?

A. Yes. Google actually gets the clicks. It's

very important for Google to get the clicks, as we've heard before.

Q. Now, let's move on. There's a number of different interactions, but for time's sake, let's move on.

This is a quote from Dr. Rhyne's testimony and this was in reference to the Yahoo! system, but he's referring to what the non-interactive message is. And he says: Yes, sir. It's the same way. It returns in a fraction of a second these ads. And I did nothing whatsoever between the time I entered that message and sent it to Yahoo!, and the systems at Yahoo! retrieve ads for the purpose of sending them back to me.

Q. Now, do you agree that that shows a non-interactive electronic message?

A. I believe that in this definition, Dr. Rhyne is not following the Court's claim construction.

Q. Why is that?

A. Because the claim construction says the sender does not provide any additional information, and there is information that can be provided. It just would be after the window.

He's identified a narrow window of time and said that's all that's at issue. But the construction doesn't say that.

Q. You mean, the construction doesn't provide any time limitation?

A. It says does not provide any.

Q. Okay. And is it the case that, in fact, with the -- that Google with search queries that senders do provide additional information after the message has been received?

A. I've given lots of examples. We just went through those.

Q. Okay. So what is -- remind us again. What is your opinion as to whether Google meets the non-interactive electronic message limitation?

A. It does not meet that limitation.

Q. Well, let's move on. And the next one I'd like to discuss with you, Dr. Fox, is the case-based knowledge limitation.

A. Yes.

Q. Now, has the case-based knowledge engine been construed by the Court?

A. Yes, it has, as you see here under Construction.

Q. That's a construction in the bottom right-hand corner?

A. Yes, that's right.

Q. And can you read that construction to the

jury, please?

A. A knowledge engine that processes electronic messages by comparing them to a stored set of exemplar cases.

Q. And is that the construction that you've applied in connection with this case?

A. Yes.

Q. And do you have an opinion as to whether or not Google uses a case-based knowledge system?

A. Google does not.

Q. And let's go on to this one.

In -- now, this is a slide that Dr. Rhyne had used in connection with his direct examination and indicates a rule-based knowledge engine. And then says a condition, action, then he provides an example: If X, then do Y.

In your opinion, does that show what a rule-based knowledge engine is?

A. No. That just defines what any program would do, because all programs have -- almost all programs have condition statements like that.

MR. FENSTER: Your Honor, may we approach?

THE COURT: Yes.

(Bench conference.)

MR. FENSTER: Your Honor, I apologize for the interruption.

Dr. Fox is about to testify -- Dr. Fox is about to testify that a knowledge engine required all kinds of things that are not in the Court's claim constructions, which is exactly what they did with electronic message, saying that the Court instructed an interactive electronic message and wouldn't let Defendants -- and would not allow Defendants to argue that other limitations that weren't in the Court's claim construction.

Dr. Fox is going to argue that knowledge engine, which the Court has defined at the parties' request, includes all these other things that are not in the Court's claim construction. He's, therefore, going to testify inconsistently with the Court's claim construction.

MR. PERLSON: Your Honor, may I respond?

THE COURT: Yes.

MR. PERLSON: First of all, this is Dr. Rhyne's slide. Dr. Rhyne provided an explanation of what this slide is. And Dr. Fox, in rebutting Dr. Rhyne, we should be entitled to demonstrate that he disagrees with the way that Dr. Rhyne has characterized what a rule-based knowledge engine is.

There actually hasn't been any -- a quote/unquote construction.

THE COURT: No. I read you right. So I'm going to hear his testimony. Overrule the objection.

(Bench conference concluded.)

Q. (By Mr. Perlson) So getting back to the rule-based knowledge engine here, Dr. Fox, do you agree with Dr. Rhyne's characterization of a rule-based knowledge engine?

A. I disagree.

Q. And why is that?

A. Because this is not following the Court's claim construction. If one were to use this explanation as it's given here, this would mean that any computer program, essentially, would be a rule-based knowledge engine. There's no knowledge engine that's shown here, for example.

Q. And going to the next one, case-based knowledge engine, underneath that, Dr. Rhyne had put compare input to cases which have associated responses.

Is your -- is that an accurate characterization of what a case-based knowledge engine is?

A. No. It doesn't follow the Court's

construction, and it doesn't follow what's commonly understood in the field.

Q. Why is that?

A. Well, we have to have the knowledge engine as is written in the phrase. We have to have a set, not just a single case. You have to have a base of cases. That's the second word there, a case base.

And there's no mention here about exemplars or other things that are in the Court's construction.

Okay. Let's look at another -- something else that Dr. Rhyne provided on his testimony.

And he was asked: Now, according to you, a case or an exemplar case can simply be anything that's used for interpreting a message?

And he responded: As far as what I've tried to look for, I believe that's correct.

Do you recall Dr. Rhyne giving that testimony?

A. Yes, I do.

Q. And do you agree with Dr. Rhyne?

A. I disagree.

Q. And why is that?

A. Again, he's not following the Court's claim construction in this explanation.

Q. Can you -- why do you think that, sir?

A. Well, he's saying it's simply anything that's

used for interpreting a message. We don't have to have a case base to do that.

For example, we've already talked about rule base, and he's agreed that rule bases are interpreting the message. So that's -- he's saying that a rule base would be case base. That doesn't make any sense, for example.

Q. Let's go into -- now, here we have some testimony where Dr. Rhyne talked about what an exemplar case was in connection with the AdMixer.

And he says: Now, a good example of an exemplar case is if you think of a query coming in as having a keyword, like puppies, and the advertisements have keywords associated with them.

So you think -- do you agree with that characterization of what an exemplar case is?

A. No. That's not an exemplar case.

Q. Why not?

A. This is saying that any set of keywords describing an advertisement is a case or a part of a case. Essentially, this would mean that of the billions of cases that Google deals with, every single one is a case.

And the whole point of case-based systems is to have examples of groups of cases, not each one being

an example. It would just go crazy if everything was an example. It doesn't make sense.

Q. And you said billions of case -- billions of ads?

A. Google has billions of ads, and according to this definition, every one of those would be a case. And that just doesn't make sense.

Q. And do you recall what -- going back to that, do you recall what Dr. Rhyne pointed to was an exemplar case in SmartAds?

A. You're talking about the second paragraph here?

Q. No.

A. I'm sorry.

Q. Just separate and apart from this.

A. Okay. So -- right. So SmartAds is a different part of the system, and Dr. Rhyne has accused the SmartAds as dealing with cases.

And SmartAds deals with a table of maybe a billion or so, hundreds of millions I've heard from the testimony given earlier today, of statistical values that one looks up. And those aren't cases. Those are -- that's entries in a big table.

Q. Now, I think that -- Dr. Rhyne had pointed to some of the attributes or features as having something

in them that might be a case.

Do you recall that?

A. Yes. It wasn't very clear to me what he was saying here.

If one were to pick -- pick an entry in this -- this SmartAds collection of things, they don't really represent anything. They're not an example of anything. They're just a situation.

Q. And is that -- you're talking about the attributes and the features?

A. That's right, yes.

Q. Well, let's use this. Mr. Fenster beat me to the punch with this one before I had a chance to talk about it with you. But let's kind of walk through what's shown here.

Can you explain what it is that you're trying to explain with this slide?

A. So two parts of the AdWords system have been accused: The AdMixer and the SmartAds. I show those sort of on the right-hand side and explain them as approaches or ways to do things using a table lookup approach.

On the left-hand side, I represent the approach that's described in the '947 patent of using a case-based knowledge engine. And for the sake of

literal and Doctrine of Equivalents kinds of discussions, I wanted to tease out the different aspects that relate to how these things are different from each other.

Q. And so you have five different purposes here. Can you explain that?

A. So the field of case-based knowledge engines deals with people trying to solve problems, and they do that in a -- in a specific domain. You heard the domain of banking, for example. Other systems have been built -- there are too many cases if you try and do everything.

So they're focused on a particular domain. So it's solving a problem by finding similar situations. Table lookups are totally different. You just give it a bunch of things, and it finds the value in the big table.

Q. Okay. And on the right-hand corner, it says AdMixer and SmartAds. Do both of those use table lookup?

A. Right. All the stuff on the right-hand side are representing what's being done in both AdMixer and in SmartAds.

Q. Okay. And the next two entries are scale and speed. Why don't you describe those together in tandem?

A. Okay. So the scale of the solutions that are possible with a case-based system, as described in the '947 patent, refers to hundreds or millions or thousands of different kinds of cases.

You can do more, if you have more computing resources, but it's -- as it shows in the next line, because you're talking about each and comparisons with each, you have to go through them one by one. It's like going through -- if you have a book of recipes and you want to find a recipe in it, you have to sort of leaf through them, if they're not in a good order. So that's a slow process.

On the other hand, if we use a different approach, the kind of thing that's related to table lookups like you might jump in a dictionary or other kind of reference like that, you just go right to the right place. And that will work for billions or even up to trillions of situations.

Q. We already talked about the knowledge engine and the case-based knowledge engine. Obviously, it has to be a knowledge engine.

A. That's right.

Q. And is the table lookup a knowledge engine?

A. No.

Q. Do AdMixer or SmartAds use knowledge engines?

A. No. It doesn't use knowledge engines.

Q. We've talked about this before. What does this represent?

A. So I was very careful to try to make it simple for the jury by putting percentages there. I didn't want to have tiny numbers and make the boxes too small to read.

So we've heard about predicted clickthrough rates, and the numbers shown here are those probabilities, which are between 0 and 1, represented as percentages just to make it simpler to fit in here. And these are produced by this lookup process we've described by the SmartAds system. So just give a graphic to kind of illustrate how this works.

Q. Now, Dr. Fox, what is your opinion as to whether Google meets the case-based knowledge limitation?

A. It does not.

Q. Let's move on to the classification step. You understood that the Court provided some constructions in relation to that?

A. Yes. There are two that are specifically shown here on this slide.

Q. Okay. And -- well, let's first talk about the automatic classification.

Now, does Google classify message -- messages as whether or not they can be responded to automatically?

A. No, it does not.

Q. And why is that?

A. Because Google sends its queries that it receives to two different systems: To the search system and to the -- what's called the AdWords system. And the AdWords system may or may not lead to results shown on this page, but that's not a classification step.

I'll give you an example. My two -- my oldest son and my youngest son were on the track team in high school, and they always wanted to win a race, but they often never made it. They didn't determine that they were not going to make the race -- that they would not win the race.

It just didn't happen that way for one reason or another. So there's no determination made. It's just that it doesn't happen.

Q. Okay. And here we see a Google search result page, but there's no ads; is that right?

A. That's right.

Q. And is there a response?

A. Yes. There's a response. And since I was looking for a Wal-Mart in the area, I actually get my

answers that are shown here.

Q. Now, here's what Dr. Rhyne says about why there's a -- an automatic response, and he refers to, well, they make a decision based on whether -- whether or not they are able to find ads within a short period of time, and they've determined that the message falls into one of two categories in this case. I have ads to return automatically, or I don't have ads to return automatically.

Do you agree with Dr. Rhyne's opinion?

A. I disagree. It's like the race example I gave before. We start off two things at the same time. We start off the search system and we start off the AdWords system. And they may proceed along and do what they need and retrieve things.

If the AdWords system doesn't get there fast enough, then we don't see things. It doesn't mean that it was determined that it wouldn't do that.

Q. So there's another part of the classification step, and that refers to classifying for whether a human intervention is needed. And you have some bullets here.

Can you just walk us through -- first of all, what do you understand to be accused in connection with this element?

A. So in order to be infringing, Google would

have to have electronic messages that are interpreted by humans. And the example that's given by Dr. Rhyne is that that's done by the impression spam system.

The electronic messages and the handling of spam, to my mind, are not related to each other.

Q. And you have -- let's keep things moving. You have individual queries or impressions not flagged for review. What does that refer to?

A. The decision of whether there's spam is based on lots of occurrences of impressions. A single one isn't going to tell you that there's spam, because it just could be right kinds of things.

It's only if you get a lot of these things that you know that it's impression spam. So the individual query is not the cause of some kind of decision being made.

Q. Okay. And not insubstantial difference, what does that refer to?

A. Well, this relates to some of the legal issues here, Doctrine of Equivalents and so forth.

The point is that this matter is -- is really different. If I'm talking about a sports team, the behavior of an individual person on the sports team as an individual is not the same thing as the team's behavior. The team behaves as a group.

And so here we have a bunch of things that have to work together before we understand this.

Q. So to summarize, what's your opinion as to whether the classification step is met in AdWords?

A. It is not met.

Q. Let's move on to the predetermined response limitation.

This limitation occurs in Claim 28; is that right?

A. That's right, in part (c) of 28.

Q. And the Court construed the predetermined response. Is this the Court's construction?

A. It is. That's right.

Q. And is this the construction that you applied in connection with your opinion in this case?

A. Yes, it is.

Q. Okay. Let's look at this slide here. What is this -- this is a search -- search result and some ads; is that correct?

A. That's right. We have the results that are shown on this side, and sometimes you get ads on the top, but here we see the ads on the right-hand side.

Q. Is this response predetermined in any way?

A. No. Everything is done dynamically. Google has to do this to satisfy the dealing with different

people's interests and changing over time and new advertisers coming on line and people changing their ads and people's budgets being changed and all kinds of things.

Q. Now, we have the -- showing the auction here.

Does the auction at all influence the results and ads?

A. Right. What we see here is an animation as they were combining these predicted clickthrough rates, which are shown as percentages, along with the bid values. And then we have to go through a sorting process essentially to find the one that has the biggest value. That's going to be the one that will be ranked No. 1. It should appear at the top of the list of the ads.

Q. Now, here again we have a slide that we've seen before. Since Mr. Fenster didn't have the luxury of the animation that I have, we'll show this here.

What's being demonstrated in this slide?

A. So we have the same query submitted with an interval of 4 seconds that you saw there timed out. And even in that short period of time, the ads that are returned are different. It's not predetermined what's going to happen. It happens dynamically.

And you see that the URL at the bottom there

is the advertiser information, but the particular creative, or the particular ad, is different in this case.

So sometimes the system will switch which creative is applied, even if it picks the same advertiser.

Q. Okay. So what is your opinion, then, as to whether the predetermined response limitation is met in that?

A. It is not met.

Q. Let's move on to the next one. Here is computing a matched score for each case that is compared.

Now, here -- here's Claim 30. We've seen that, and there's all sorts of elements here. We're not going to go through every one of these, are we?

A. No. I disagree with all of them, but I think we'll focus on the last one probably for sake of time.

Q. So here there's the first part that -- and that refers to assigning a score to each stored case model, which is compared with the case model?

A. That's right.

Q. Okay. And what is this slide showing?

A. Well, it was hard for me to understand what Dr. Rhyne is accusing as a case in the case model.

What we see here on the left are the billions of ads that are dealt with by the AdWords system. There's a process that does involve comparison. It involves some information retrieval kind of filtering techniques to narrow down from those billions to typically 200 -- sometimes up to a thousand but on that order. And that set is what goes to the SmartAds in pairs.

So for a given query, you get one ad going to it, and it comes back with a value that returns from that, as we saw before, this PCTR.

Q. Okay. So there are ads scored in the SmartAds system; is that correct?

A. The SmartAds is actually computing a score for the things that it sees, yes.

Q. But throughout this whole winnowing down process, are there scores applied to every --

A. No. The thing that's scored is a set of ads, which is on the left-hand side. And the things that are actually compared are the things on the right-hand side. And this -- this process is talking about the scoring of the ones that are actually scored, not about how it goes in between, this filtering process, which does other things to get down to that.

Q. Now, there's a second part here, and then there's a map. What's being shown here? What is the --

what is the claim being claimed in the 30(b6) in the second line?

A. So if I want to compare my two hands, I will compare different aspects. I'll compare the thumbs and my index finger and so forth. As I go through one by one, I'll decide whether those things are matching or not.

That's what's being described here, keeping count and keeping track of the different matches that I find between these things that I tried to compare.

If I find a match, I want to make things -- find a correspondence between these things, the score should increase. If I was doing fingerprint analysis, I have some research grants now on fingerprint analysis. The more things you get to match, the more sure you are that the two fingerprints are matching.

If I don't find something, then if I get a mismatch, I want to be sure that my score doesn't increase. It should be at least staying the same or certainly not increasing.

Q. Does the score -- is that the AdWords?

A. No. It's -- the AdWords does not follow what that limitation says.

Q. And what are you trying -- is that what you're trying to show in this slide here?

A. Yeah. I'm making two points here in the two different bullets.

The first one is that the Court's construction talks about arithmetic increase or decrease. And I'm pointing out that the arithmetic operation at issue here is multiplication.

And just pointing out a fact at the top there, if you multiply a set of things together, each of the things that you multiply, if it's bigger than one value, the thing will go up, the overall score, and, otherwise, it will go down.

So what we see here are two counter-examples. They are shown on the left where we see -- the first one says that there's a match but actually decreases, as you see with that red arrow, because the multiplier is less than 1.

So these are examples of where this claim is not satisfied.

Q. So just to summarize, is it your -- what is your opinion as to whether 30(b6) is met in the AdWords?

A. It is not.

Q. Now, let's go on to arithmetic decrease. This is in Claim 31.

Do you understand that the predetermined mismatch-weight was construed by the Court?

A. Yes.

Q. And is this the construction that you applied?

A. Yes.

Q. And what -- what is the construction?

A. It says that a predetermined factor which arithmetically decreases a stored case model's match score when a feature from the stored case model does not match text and attributes from the presented case model.

Q. Is that true in AdWords?

A. It's not true in many cases.

Q. Okay.

A. As is shown here.

Q. Okay. Well, explain -- can you explain to the jury how this demonstrates that?

A. This is the same example I showed before, and there are lots of other examples. Just picked one to be clear.

On the top case, we have a match leading to a decrease, but here we're talking about mismatch-weight, so we should focus on the bottom row.

We have a mismatch and it actually leads to an

increase as opposed to a decrease or not changed.

Q. So is it your opinion that the arithmetic decrease limitation is not met in AdWords?

A. That's correct. It's not met.

Q. Okay. Last one here, let's talk about normalization for a few minutes.

Now, this is in a limitation that's in 20 -- 33; is that right?

A. That's correct.

Q. Did the Court provide a construction for normalization?

A. Yes. That's what's shown here.

Q. Okay. And what does this construction require?

A. It requires two things. When we're working with a matched score, we have to do a division. And it also explains what we divide by, which is the maximum possible score for this stored case model.

Q. And does that happen in AdWords?

A. No. It doesn't happen in AdWords.

Q. And is this the formula that Dr. Rhyne pointed to in his testimony?

A. It is. It's a formula that just comes out of a probability theory.

Q. Okay. And why -- why doesn't this meet the

limitation?

A. Because we're dividing by something that's not a maximum possible score. This is simply a mathematical equation or conversion. It's not at all a normalization as the Court's stipulated.

Q. Okay. And would you -- is this an equivalent to normalization in any way?

A. They're not at all alike, no. One is just a mathematical thing, and the other one is actually a process of normalization.

Q. So what's your opinion, then, as to whether the normalization is met in AdWords?

A. It's not met.

Q. Okay. Now I'd just like to just briefly move on to another topic, and we've heard some testimony today regarding some of the other patents and how they potentially may relate to damages issues.

And here you've done -- oops. I skipped one. Okay. Why don't -- if you could describe this one. This would be the Invenda '991 patent.

Now, is this patent comparable to the '947 patent, as Dr. Rhyne has interpreted it?

A. If we use Dr. Rhyne's interpretation of what the '947 patent means, which I don't agree with, but let's take that for the sake of argument. If we use

this interpretation, then this is actually very comparable to the '947 patent.

Q. Why is that?

A. Because they're both working with query processing, and he's been arguing this is all about query processing. And there's a normalization step that's shown here, for example, as well.

Q. And then the '996 patent, do you have an opinion as to whether that's comparable to the '947 patent, as Dr. Rhyne has interpreted it?

A. I do. If we interpret according to Dr. Rhyne, then, again, this is working with a list of names, a list of the terms, companies, and other kinds of things. And it's the grouping them together and applying normalization techniques to those as well.

Q. Okay. Another one, this is Meyer '916 patent application.

Is this comparable to the '947 patent, as interpreted by Dr. Rhyne?

A. Dr. Rhyne is interpreting advertisement as relating to the '947 patent. This particular patent application is about advertising and about ways to improve the performance of advertising systems.

Q. In my effort to try to cut down on slides, I think I actually eliminated one more slide about the

patent that I wanted to ask you about. And we heard Mr. Huber earlier talking about PageRank.

Do you recall that?

A. Yes, I do. And I've studied that patent in great depth.

Q. And is that the '999 patent?

A. It is.

Q. Is that comparable to the '947 patent?

A. I don't consider it at all comparable for lots of different reasons.

This actually is very close to the -- some of this stuff I did in my doctoral research, so I know quite a lot about this and I've studied this and I teach about this particular patent.

Q. So what's your opinion, then, as to whether the '999 patent is comparable to the '947 patent?

A. It's not comparable, and it's very closely related to Google as we've heard earlier in Court.

MR. PERLSON: I have no further questions, Your Honor.

THE COURT: Cross-examination?

MR. FENSTER: Yes, Your Honor.

THE COURT: Before we do, counsel approach.

(Bench conference.)

THE COURT: Mr. Rooklidge, my court reporter informed me at the break that you might need to exit. If you need to exit, you can.

MR. ROOKLIDGE: Okay.

THE COURT: I didn't want --

MR. ROOKLIDGE: Thank you.

THE COURT: I was trying to --

MR. ROOKLIDGE: I was going to wait until Ms. Doan comes back.

THE COURT: Okay. Well, that's fine. I just want to get -- if you want to wait for her, that's fine, too.

MR. ROOKLIDGE: All right. I appreciate that, Your Honor. Thank you.

THE COURT: I didn't know when we would break, and I didn't want to --

MR. ROOKLIDGE: Okay.

THE COURT: -- keep you any longer than you anticipated.

MR. ROOKLIDGE: Thank you, Your Honor. Appreciate it.

(Bench conference concluded.)

THE COURT: Cross-examination.

MR. FENSTER: Yes, Your Honor.

CROSS-EXAMINATION

BY MR. FENSTER:

Q. Good afternoon, Dr. Fox.

A. Good afternoon, Mr. Fenster.

Q. You and I have met on two separate prior occasions, haven't we?

A. That's right.

Q. On two different depositions?

A. That's correct.

Q. Now, Dr. Fox, you realize that you're testifying here under oath?

A. Yes.

Q. Just like you did at the deposition?

A. Yes.

Q. Now, you also prepared an expert report in this case.

A. I did. 109 pages, yes.

Q. Yes, you did. And that's this, right?

A. Yes. That's -- with the exhibits, it's more than 109 pages.

Q. And do you stand by your report today?

A. The report is my representation of the information as I knew at that time. There have been changes in the Court's construction and other rules, and I am following that in my testimony today.

Q. Now, you pretty much disagree with almost all

of Dr. Rhyne's analysis, right?

A. Pretty much, yeah.

Q. And out of all the elements that Dr. Rhyne opined or met by the Google AdWords system, you pretty much think that none of them are met, right?

A. I explained in my report the disagreements with each of them one by one, yes, as he stated in his report based on what was available at that time, yes.

Q. In fact, you went through your report and you found -- and you opined that not a single element was met by the Google AdWords system, right?

A. That's right. There were errors in his discussion of every one of the elements, yes.

Q. Now, you testified that you were getting the rules of the road, because you're not a patent expert, right?

A. Yes, that's right.

Q. One of the rules of the road is that you have to follow -- is that the claims control the scope and not the specification, correct?

A. That's correct, yes.

Q. And another rule of the road is that you have to follow the Court's claim construction, right?

A. Yes, that's right.

Q. And you were here -- you've been here all

through the trial?

A. Almost. I didn't stay here for all the damages stuff, but I was here all the other times.

Q. Were you here when Judge Everingham told the jury that the Court's claim construction governs and that it's the -- that everyone must apply the Court's claim construction?

A. Yes, I believe I was.

Q. Now, you testified on direct -- you accuse Dr. Rhyne of not following the Court's claim construction, didn't you?

A. It seems to me from what I heard him testify and the examples we showed here that those illustrate that point, yes.

Q. Can you answer the question yes or no? You did, didn't you?

A. Yes.

Q. All right. Have you heard the adage, people in glass houses shouldn't throw stones?

A. Yes, I've heard that expression.

Q. Dr. Fox, in your report at Paragraph 44, you gave your definition of electronic message, didn't you?

MR. PERLSON: Your Honor, can we approach?

THE COURT: Yes.

(Bench conference.)

THE COURT: You're cross-examining him on a definition. This is one of the terms that I held by pretrial motion practice were improper.

MR. PERLSON: Okay. But, Your Honor, this -- he didn't apply the Court's claim construction. When he gave his opinion, he said it was limited to this, and I should be able to cross-examine him on that.

THE COURT: Move on to something else, okay? There was a claim construction for electronic message. I'm going to give you --

MR. FENSTER: All right.

THE COURT: The Court will give you that in the Court's instructions, but let's not -- I'm not going to drag either side of the experts over the coals based on what's written before I provided additional clarification in the case.

MR. FENSTER: Okay. Your Honor, let me -- let me just ask, because I'm going to go into some other questions.

With respect to knowledge-based -- knowledge engine, he said that the case-based and the rule-based knowledge engine has to be integrated, and that's not in the Court's claim construction.

THE COURT: Well, is he testifying to

that?

MR. PERLSON: He never provided that testimony on direct, Your Honor.

THE COURT: I don't think he did either.

MR. FENSTER: It goes to the credibility in the analysis that he provided in doing his analysis.

THE COURT: Well, here's the -- the Court's claim construction, as I understand it, Counsel, doesn't either require nor exclude the possibility that it has to be integrated.

MR. FENSTER: Okay.

THE COURT: And if you want to ask him that, I'm going to let him answer, and I'm going to let Mr. Perlson develop that in redirect, okay?

MR. FENSTER: Uh-huh.

THE COURT: Because I'm not sure that the integration issue was ever presented to me --

MR. PERLSON: Absolutely, Your Honor.

THE COURT: -- as a matter of claim construction. But if you want to ask about that, you can.

MR. PERLSON: But, Your Honor, we didn't provide testimony on direct on that issue.

THE COURT: Well, I understand that, but I'm not -- I'm just saying that I'm -- I'm not sure that

violates my claim construction order, his opinion that it has to be integrated.

MR. FENSTER: I'm not saying that it necessarily does, but I think it's fair cross-examination as to whether he inserted limitations that are not either in the claims or the Court's claim construction.

THE COURT: I don't think that's -- I don't think he's inserting limitations based on that. I think reasonable minds can differ --

MR. FENSTER: Okay.

THE COURT: -- as to whether or not it's got to be integrated or not.

MR. FENSTER: Okay.

THE COURT: And I'm not sure the patent is very clear on that point.

MR. FENSTER: Okay.

(Bench conference concluded.)

Q. (By Mr. Fenster) Now, Dr. Fox, you recall on direct by Mr. Perlson, he asked you about whether or not the Google AdWords system meets the non-interactive electronic message requirement, right?

A. Yes.

Q. And you said that the Google system was interactive because, in part, you get feedback as you're

typing the search request in, right?

A. That's right. You get messages sent back and forth, yes.

Q. Right. What kind of messages?

A. They're http messages.

Q. Electronic messages?

A. They're electronic messages.

Q. All right. Now, in your report, you said at Paragraph 44, quote: It is clear that --

MR. PERLSON: Your Honor, can we approach again?

THE COURT: Yes.

MR. PERLSON: Can we take this down?

(Bench conference.)

THE COURT: Are you going to the Court's claim construction?

MR. FENSTER: No.

THE COURT: Don't go there.

MR. FENSTER: Okay. I'm not going to. I was -- I admitted the questions and will not ask him whether or not that was in the Court's claim construction, but he's applying a definition that's inconsistent -- he's providing testimony today that M is an electronic message, whereas his report says it has to be a multiword text.

That's just inconsistent with his own prior testimony as to what it is. I'm not going anywhere near a claim construction or what the Court's claim construction was.

MR. PERLSON: Well, he's asking him to apply it to what --

THE COURT: That's right.

All right.

MR. PERLSON: I specifically did not go into this because of the Court's ruling.

MR. FENSTER: And he's given testimony that's inconsistent with what he said in his report. And I'm not going near the claim construction. I get the Court's point on that, but he's inconsistent today with what he said before.

THE COURT: Well, I don't see how -- step back.

(Bench conference concluded.)

THE COURT: Ladies and Gentlemen, I need to excuse you at this time for about five minutes. If you'll give me five minutes, there's a procedural matter I've got to take up outside your presence, and I will tend to it as quickly as I can, but these sometimes are necessary events in any trial.

So if y'all will take a five-minute

recess, I'll bring you back in. Don't talk about the case.

LAW CLERK: All rise.

(Jury out.)

THE COURT: All right. Y'all have a seat.

All right. What problems does the Plaintiff have with the construction of electronic message to mean a complete thought or idea transmitted electronically?

MR. FENSTER: None, Your Honor.

THE COURT: What problems do the Defendants have with that construction?

MR. PERLSON: Well, Your Honor, I don't know that there's any support in the patent for that, and I'm not sure what it means.

If -- if -- if I typed in M and hit send, that would be a query, and you might get a response, and that would be a message under their interpretation. I don't know whether that's a complete thought or idea or not, but it would be an http message, and I don't think that that would --

THE COURT: The patent talks about things like e-mail messages, voicemail messages, dual-tone frequency inputs, and things that represent a complete

thought that one might have who is sending the message.

MR. PERLSON: It does. I mean, I guess I could use an example that if -- you know, if you typed in some gibberish and then hit search, that's not a complete thought, but it is a message, and I think that that would meet the definition of -- I mean, that would be a search query.

And under the way that, you know, Plaintiff has been applying -- or Dr. Rhyne has been applying electronic message, it would meet it, but I don't think that that's a complete thought or idea. It's just gibberish, but it's still a message under a query.

So I'm not --

THE COURT: Then if the jury doesn't think it's a complete thought or idea, they're going to find in your favor.

MR. PERLSON: Well --

THE COURT: What you want me to do is define message so it excludes whatever their theory is, and they want me to define message so it excludes whatever your non-infringement theory is.

MR. PERLSON: I understand that completely, Your Honor, and Your Honor has made absolutely crystal clear that we shouldn't be arguing

that it's limited to e-mail, and we have followed that.

Just -- just what actually -- what Mr. Fenster was putting up there was what Dr. Fox was saying is that it -- it was like a non-trivial message. I mean, it's somewhat close to what you're saying, but I don't know whether it's exactly the same.

And -- but I'm not -- without going into the intent of each -- each person sending the message, I'm not really sure whether you would be able to know whether it's a complete thought or not.

I mean, you know -- and so I guess that's my initial reaction. You know, obviously, we need some time -- you know, we'd like some time to think about it, but perhaps -- yeah, that's my first reaction.

THE COURT: I understand. All right.

MR. ROOKLIDGE: Your Honor, Yahoo!'s position is that that interpretation would be inconsistent with the patent itself. It finds no basis in the specification, which, in fact, Your Honor has pointed before to the passage in the patent that talks about the variety of data formats, including DTMF tones. And there are many uses of DTMF tones that could provide something other than a complete thought.

And remember, the Court -- actually, Dr. Rhyne has defined the source of the message not only

as being the person but also the user and the user's computer browser.

So the question is, whose thought -- whose complete thought is that supposed to be? Is it an individual person? Is it that person's computer and browser?

It just seems to be inconsistent with the specification of the patent, Your Honor.

THE COURT: Well, what if the DTMF tone represents the complete thought? Press 1 for customer service.

MR. ROOKLIDGE: Well, there's -- there's absolutely nothing in this patent that would limit the DTMF tone to that or the voice data to that, and we've heard other expressions.

Ms. Rice talked about the electronic message being a television broadcast, and the electronic portion of that doesn't necessarily need to -- to contemplate a complete thought.

We've heard discussions of Morris Code and satellite communications. And whose complete thought are we talking about, and how do we know when a thought is complete?

I mean, that would -- unfortunately, my problem is, a lot of messages come out of my mouth that

are not complete thoughts, so --

[Laughter.]

THE COURT: Probably the one you're telling me now.

[Laughter.]

MR. ROOKLIDGE: With that, I'll go sit down, Your Honor.

THE COURT: All right. Mr. Fenster, you're not going to -- you're not entitled to question him on that Paragraph 44, even if it is inconsistent. I think that's a construction that you're going to get in the jury charge, the one I've just given you.

But, you know, I addressed the non-interactive electronic message term in the claim construction against the backdrop of what you-all had proposed was a proper construction against an indefiniteness argument.

You come to trial, and now not only do we have that it's not an indefiniteness argument anymore, you're not waiving that, but it's -- an electronic message has to be limited to an e-mail or some other type of term.

Now, I'm going to construe it, but I guess I don't understand what your position is as to why what he said in his expert report before he had the

benefit of that construction is relevant.

MR. FENSTER: Two things.

First, Your Honor, it is and always has been on our position at claim construction that electronic message is a common and ordinary meaning that doesn't -- that doesn't need construction.

THE COURT: Well, the Circuit told us only if it has to be construed.

So I appreciate that, but -- I mean, I'm with you, but the people that grade my papers, you know, they want me to construe these things.

MR. FENSTER: I actually don't have the same understanding with respect to the Federal Circuit law on claim construction.

I think that the claim -- that the Federal Circuit is clear that claim construction should be done consistent with the intrinsic evidence, but it's not -- it doesn't have to be done to the point where it resolves all issues of infringement.

And that's what's happening here is, we've got a claim construction that was done inconsistent -- that was done consistent with the Court's -- with the intrinsic evidence, and now we're having a fact issue as to whether or not that claim construction is met, and Defendants are raising all

these claim construction issues that are -- that don't have to be decided. They're not necessarily claim construction issues.

Now, you -- Your Honor held at the beginning when Mr. Verhoeven argued that electronic message is limited to e-mail -- that's sort of what, you know, started this -- the ball rolling down the hill, I think, and Your Honor found that that was inconsistent with your claim construction.

Now I'm not sure that it's inconsistent.

THE COURT: No. What I -- what I -- what I addressed was the argument that the figure in the patent that showed an example was the, quote, gist of the invention, as I recollect it.

MR. FENSTER: Okay. So I think that it's fair for them to argue that the electronic message is however Dr. Fox thinks one of ordinary skill in the art should -- should construe it, and Dr. Rhyne can testify and has testified as to how he construes it, and all of that is within the rubric of the Court's claim construction, which didn't give a specific definition of that particular term.

Now, Dr. Fox just testified inconsistently, in my view, that M is an electronic message. Now, that is absolutely inconsistent with the

opinion that he stated in his report. Regardless of the Court's claim construction, that's just inconsistent, and I think that that's fair impeachment.

As to all of these issues, you know, with respect to knowledge engine, Mr. Perlson skipped over one of the slides that -- where Dr. Fox says, you know, to be a knowledge engine, it has to meet all of these requirements that he gets directly from the specification.

And I think it's fair for Dr. Fox to opine that one of skill in the art would opine -- would understand knowledge engine to be X, and Dr. Rhyne has opined that it meets knowledge engine.

But I think it's fair impeachment to ask Dr. -- Dr. Fox if those limitations are specifically in the claims or if he's getting them from the specification in light of the Court's construction.

That's -- that's this line of questioning.

MR. PERLSON: Your Honor, this is just an instance of litigation gotcha. They file a motion that says that Dr. Fox can't testify about his view of what an electronic message is, we don't elicit that testimony and -- based explicitly on your ruling, and then they want to raise through, frankly, nasty statements in

front of the jury, like throw glass houses, the types of comments that, you know, Your Honor had indicated we shouldn't be making, and then try to impeach Dr. Fox after simply saying repeat -- applying what Dr. Rhyne had indicated an electronic message was.

He didn't give the opinion that he had in here specifically because of Your Honor's order. And to have him impeached on that, for following what the Court said and merely interpreting Dr. Rhyne's --

THE COURT: Well, I agree with you, Mr. Perlson. I'm not going to let him do that.

MR. PERLSON: Thank you, your Honor.

THE COURT: I've decided.

And bring the jury back in.

You're not entitled to go into an opinion to show it's inconsistent with the opinion I didn't allow him to give after you filed a motion to preclude that opinion.

Bring them in.

LAW CLERK: All rise.

(Jury in.)

THE COURT: Have a seat.

I think we've got it sorted out, but we'll see.

Go ahead.

MR. FENSTER: May I proceed, Your Honor?

THE COURT: Yes.

MR. FENSTER: Thank you.

Q. (By Mr. Fenster) Now, Dr. Fox, on direct by Mr. Perlson, you talked about whether or not the AdWords system meets the predetermined response requirement, correct?

A. Correct.

Q. Now, you stated -- you testified to this slide, which is DX demo 379 --

A. Correct.

Q. -- right?

And you showed us -- or Mr. Perlson showed a demonstration that showed that four seconds elapsed and that these two ads were different, right?

A. Correct.

Q. Now, who identified these two ads to pull out? Did you?

A. I looked at this the other day and made up the slide, yes.

Q. Okay. So now, what you were trying to illustrate is that these two ads are different, right?

A. That's right.

Q. That's what you wanted --

A. It's blown up on the right-hand side, so it's

more readable.

Q. Right. And that's what you wanted the jury to focus on, right?

A. (No response.)

Q. Now, if you look at the other ads, there are four ads served in response to both of these queries, correct?

A. Correct.

Q. Now, what about the other three? Are those the same?

A. I can't see very well from here, but I think so.

Q. Sure. Let me zoom in.

A. It's kind of fuzzy, but I think they are. I apologize. My copy's not too clear.

Q. The vegas.com?

A. No. Actually, the first one is different. There's $20 dollars on the first one at the top, and it's not on the second example. So that's different, too.

Q. And the third one?

A. Yeah. The third one is different, too. And the fourth one looks the same, but, again, I can't see too well.

Q. Now, where did each of these ads come from?

A. They originally come from advertisers.

Q. Where does Google retrieve them from in order to put them on this page, Dr. Fox?

A. From the ads database.

Q. And in order to serve them here, do they have to already be in the ads database?

A. They have to be there, yes. Something that leads to them has to be there, correct.

Q. Now, the Court -- the claim doesn't require that every one be a predetermined response, correct?

A. It depends how you define response. I disagree with your definition of response, I think.

Q. Okay. Now, this is regarding Claim 26(c). Let me turn it so you can see it.

A. Can I stand up to look around -- okay. I can see it now. Thanks. I appreciate it.

Q. Now, 26(c) requires retrieving one or more predetermined responses, right?

A. That's right.

Q. Now, how many predetermined responses have to be met in order to meet this limitation?

A. It says one or more.

Q. That's right. And if at least one or more is met, would you agree that this limitation is met?

A. That's what it says.

Q. Now, Dr. Fox, let's talk about the classification step in 28(b1)(ii).

Do you recall that 26(b1)(ii) requires classifying the electronic message as at least one of and (ii) as requiring assistance from a human operator?

A. Correct.

Q. Now, Google performs ad spam filtering, correct?

A. Yes. Some part of Google does, yes.

Q. And one component to ad spam filtering is manual processing involving human -- human intervention, correct?

A. That's correct.

Q. And there are a number of potential -- of different potential triggers for the manual processing by humans, correct?

A. Sure.

Q. And Google's processing software looks for strange things, right?

A. Well, it does analyses that look for unusual behaviors, yes.

Q. Right. And when Google software finds unusual behaviors, it generates reports for humans to review, right?

A. Sometimes. It produces entries in databases

sometimes. It does different things, yes.

Q. And when Google software finds strange things, one of the actions it will take is to flag it for human review, correct?

A. Yes, that's one of the actions we heard from Mr. Furrow earlier today.

Q. And the Court's claim construction requires -- requires -- states that requiring assistance from a human operator means requiring that a manual reviewer review the electronic message or information derived from the electronic message or review, revise, or compose the response to be delivered to the source, correct?

A. Yes, I see that.

Q. Now, Mr. Perlson showed you this slide, DX Demo 351?

A. Yes. I made up that slide, yes.

Q. Okay. And were you trying to say that the SmartAds system is a table lookup system?

A. The method that's used in SmartAds is to look up values and return them, which is a table lookup process, yes.

Q. Now, Google's AdWords system does a lot more than just use a table lookup, doesn't it?

A. Yes. It has different parts. We heard about

the training part earlier, for example. That's a different part of SmartAds, yes.

Q. Well, in fact, Google AdWords compares lots of information about the query -- let me -- let me withdraw that.

You heard Mr. Furrow testify earlier?

A. Yes, I did.

Q. Okay. And he talked about how Google AdWords uses lots of information about the query and lots of information about the -- about the ads to find matching ads, right?

A. Not exactly. He didn't say lots of information. He gave an example of 30 different types of things that were included in the attribute templates in the file that you had him look at.

Q. Well, in fact, Google uses the text of the query itself, as well as other information about the query, in finding ads that are related to the query, correct?

A. Correct.

Q. And in the process of identifying which ads to serve, AdWords uses the text and other information about that query to find those ads, correct?

A. You're talking about AdWords, right? I lost your question. Can you say it one more time? I'm

sorry.

Q. Yes.

In the AdWords system, isn't it true that Google AdWords uses the text of the query, as well as other information about the query, in finding relevant ads?

A. Yes, that's true.

Q. And AdWords also uses the text and other information that it has about the advertisement, correct?

A. Yes. They're put together, yes.

[redacted]

REDACTED BY ORDER OF THE COURT

Q. And it also considers the statistics -- the statistics related to this -- actually, let me withdraw this question.

MR. FENSTER: Excuse me just one moment.

(Pause in proceedings.)

Q. (By Mr. Fenster) Now, do you recall -- you were here for Dr. Rhyne's testimony?

A. Yes.

Q. Okay. Now, do you recall that Dr. Rhyne testified that Google met the comparing step of 30(b4)?

A. I think so. He testified for a long time. I think I remember that, yes.

Q. And one -- and he pointed to several of the attributes in the Google AdWords as meeting the comparing limitation, correct?

A. I don't remember specifically, but I suspect so.

Q. Do you recall this slide from Dr. Rhyne's presentation?

A. Yes, I do.

Q. And one attribute that Google uses is creative query matches Line 1, correct?

A. The one at the top there, yes. You -- I see the one at the bottom that's highlighted, which is the one I used in my example before.

Q. Right. There are two attributes on this page, right?

A. The attributes are defined by the brackets, yes.

Q. That's right. So the top one is one attribute, correct?

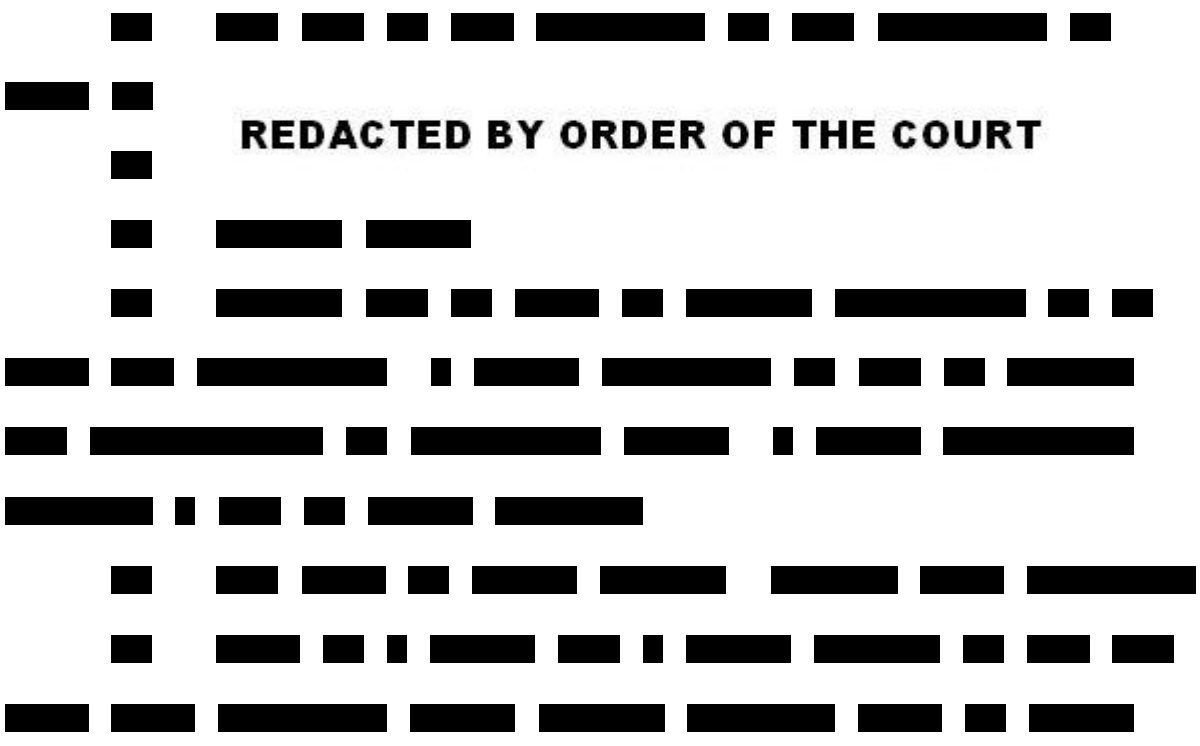
A. It's actually a template. It's not the attribute value. It's a template.

Q. You're right. This is an attribute template, correct?

A. Right.

Q. And it's comprised of these features that are within the brackets, right?

A. That's right.



REDACTED BY ORDER OF THE COURT

Q. Okay. Now -- and that is what led to this comparison, right?

A. It was discussed in this example here. I wouldn't call this a comparison, but...

Q. That's right. You don't think there is a comparison.

A. No, there's no comparison.

[redacted]

REDACTED BY ORDER OF THE COURT

[redacted]

Q. Now, in your deposition, you said you didn't know -- you had no expectation, you didn't know what to expect when -- whether the odds multiplier would be higher or lower when the user country matched the query country, right?

A. I gave another counter example in my report, but it was kind of complicated, so I wasn't sure about this particular case.

Q. Now, you -- but you've only pulled out one example to show the jury where the score went down, right?

A. That's because of the interest of time, yes, certainly.

Q. Okay. Now, there are some examples, aren't there, where the score will increase when these two things match, right?

A. Sure.

Q. And you didn't show the jury that.

A. I did actually in my example. I showed a few where there were different values. I don't remember if they were all decreasing or increasing, but there were some other cases I gave there. I had a few slides, but

I only had one I was able to fit into the time allowed.

Q. Now, do you have any expectations whether -- as to whether the score will generally -- will usually increase when -- when there's a match?

A. I know of lots of situations when this will not be the case, but I would expect, in many cases, it would be the case.

Q. There will be examples, in fact, lots of examples, when the score will increases when there's a match; is that right?

A. There are examples of both the increasing and decrease in each of these situations, yes.

Q. Okay. And the claim only requires that the score increase when at least one or more of the text and attributes from the query -- from the case model match the stored case model, correct?

A. I don't read it the same way you do, but -- but that's what the words say.

Q. You don't read the at least one of the attributes and the text match the stored case model, the score is increased by a predetermined match-weight?

A. Yeah. I gave the example of the fingers, you know, of comparing. And so that's one example, and then we have other examples. So we go through these one by one.

Q. You agree, Dr. Fox, that there are lots of examples in the Google AdWords system where the score increases when at least one of the text or attributes between the query and the ad match, correct?

A. Sure.

Q. And there are lots of examples in the AdWords system when the scores decreases when there's a mismatch in the text and the attributes, correct?

A. Sure.

Q. And that's -- and the claim requires at least one of, correct?

A. It requires more. This is just part of the claim. There's other steps in the claim that talk about comparisons and so forth, yes.

Q. That's right.

Now, do you remember this slide from your direct?

A. I do.

Q. Okay. Now, you testified that there are billions of ads in the database, correct?

A. That's what I've been told, yes.

Q. And of those ads, how many get pushed down to SmartAds? How many get fed into SmartAds as a candidate?

A. I heard roughly about 200, as Mr. Furrow

explained earlier today.

Q. Right. Now, you understand that that's where Dr. Rhyne points to for the comparing step, right?

A. I do.

Q. Now, isn't it true, Dr. Fox, that every one of the ads that are evaluated by SmartAds are scored?

A. For each query ad pair, there is a computation that leads to a predicted clickthrough rate. That's a kind of score, yes.

Q. And SmartAd's Selection Server calculates the predicted clickthrough rate for each ad that qualifies for the ad auction, correct?

A. With respect to a single query, yes, it does that. Yes. Those are the values computed, yes.

Q. Right. When the user presses enter, an http message is received by Google, correct?

A. That's one of many situations that leads to a message being received.

Q. Okay. And then when it does, the AdWords system will interpret that http message, correct?

A. I would not use the word interpret.

Q. It will process it?

A. It will process it, yes.

Q. Okay. It will process it. And then as a result of that processing, 200 ads will go down to

SmartAds, correct?

A. That's the typical situation, yes.

Q. Okay. So after the user presses enter --

A. Actually, it's -- they go one by one. They don't go as a package. Each one of them is sent together with a query corresponding, and it looks up a value for that pair.

Q. Okay.

A. So they don't go together as you -- as you implied.

Q. Okay. So after the user presses enter, as a result of the processing, 200 ads or so will be sent to AdWords, correct?

A. No. That's what I just disagreed with. One at a time they go there.

Q. Okay. But -- now, all -- all of this is happening before the results get served, right?

A. It depends. If the AdWords system loses the race, as I used for my example before, it may not get there in time.

Q. Whether or not they all come at once or are sent serially, isn't it true that every ad that's evaluated by SmartAds in response to a single query is given a PCTR score?

A. When the ads are sent from the ad creative one

by one to SmartAds, a PCTR score is computed. I'm trying to make sure I understand your question. That's why I stated it that way.

Q. Right. But when -- can you answer it -- can you give a clear answer?

A. Okay.

Q. Are all of the ads that are sent to the SmartAds Selection Server, after the user presses enter in response to -- and submits a single query, are all of those ads scored or not?

A. Each of them is, yes.

Q. All right. Thank you.

A. You're welcome.

Q. Now, Dr. Rhyne -- or, Dr. Fox, when -- when you went through your report, you were aware that there was a reexam?

A. Yes. I mention it in my report, yes.

Q. You didn't rely on it for any of your opinions?

A. No, I didn't.

Q. Even though it was submitted by Google?

A. Right.

Q. And you didn't submit it -- you didn't even cite it in your report, correct?

A. I think I mentioned that I looked at the

reexam in one place. I'm not sure, but I'm pretty sure I did.

Q. In your deposition, do you recall testifying that you didn't -- that you didn't cite it in your report?

A. I can't remember whether I did or not, and in -- if it's in the deposition, I apologize. It's 109 pages. I can look for it, if you want me to.

Q. No.

MR. FENSTER: Your Honor, I'll pass the witness.

THE COURT: All right. Redirect?

MR. PERLSON: No further questions, Your Honor.

THE COURT: All right. On behalf of Yahoo!?

MR. ROOKLIDGE: Oh, no further questions, Your Honor.

THE COURT: All right. So you may step down.

Tell me you've got a 20-minute witness.

MR. PERLSON: Pass it over to Yahoo!, Your Honor.

MS. DOAN: I'm not sure he can be 20 minutes, Your Honor, but if we can start today and

finish tomorrow, we would appreciate it.

THE COURT: Let's get started then, okay?

MS. DOAN: Get started?

THE COURT: Yes. Call your next witness.

MS. DOAN: Your Honor, we call Keith Nilsson.

THE COURT: What's his first name?

MS. DOAN: Keith Nilsson.

THE COURT: Was this witness previously sworn?

THE WITNESS: Yes.

THE COURT: Okay. Come around, sir, and have a seat, and try to talk into the microphone for me.

THE WITNESS: Will do.

MS. DOAN: May I approach, Your Honor?

THE COURT: Yes.

KEITH NILSSON, DEFENDANTS' WITNESS, PREVIOUSLY SWORN

DIRECT EXAMINATION

BY MS. DOAN:

Q. Mr. Nilsson, would you please introduce yourself to the jury.

A. Yes. Hi there. My name is Keith Nilsson. I work for Yahoo!.

Q. And what do you do for Yahoo!?

A. I'm the senior vice president of our global

initiatives group.

Q. And how long have you worked for Yahoo!?

A. I've worked at Yahoo! for over 10 years, which is -- the company has only been around for 15 years, so that's two-thirds of the company's history.

Q. Can you tell me a little lit about your personal background.

A. Sure. I was born in Japan. I got to Japan. My dad was in the -- in the Army. He was stationed at Fort Ord, and he was stationed over in Japan. Both my sister and I were born there.

We moved back actually to an area close to Fort Ord, California, so I'm from pretty much California since then. I've got a family. Been married for 17 years. Two little boys, age 7 and 4.

Q. Can you tell us a little bit about your educational background.

A. Sure. I went to UC Davis, which is in California. I got a Bachelor's of Arts in economics, and I also got an MBA and a Master of International Affairs from Columbia in New York.

Q. Where else have you worked besides Yahoo!?

A. I've worked at Intel Corporation, and I've worked at Bankers Trust and Alex Brown.

Q. And what all have you done for Yahoo! since

you've been there, your different jobs?

A. I've done a number of different things over the 10 years. I first started out running our corporate development group, which did all of our investments and acquisitions for the company.

After that, I went and ran one of our geographic regions called the emerging markets, which brought Yahoo! services to the developing world in Latin America, Southeast Asia, India, Middle East, Africa, those types of places.

Q. Okay. Mr. Nilsson, have you ever testified before?

A. I have never testified.

Q. Well, we hear slower over here or at least I do, so --

A. I will.

Q. Okay. Are you part of the executive management team?

A. I am. I report to our CEO, Carol Bartz, and I'm on her executive management team.

Q. Tell us what the executive management team does.

A. It meets monthly. It reviews the operations of the Yahoo! businesses. It makes important decisions for the company.

Q. And are you an engineer?

A. I am not an engineer. I do not have an engineering degree.

Q. Are you more on the business side?

A. I am on the business side. I run the sales and business development teams.

Q. Can you tell us how Yahoo! got started?

A. Sure. I'd be happy to.

Well, Yahoo! is one of the first internet companies out there. Back when the internet was first created, it was very difficult to find web pages. So the chief founders, they -- they created this directory similar to, you know, Yellow Pages that organizes businesses. They created this directory that organized all the web pages online.

And this directory was originally called Davis and Jerry's Guide to the Worldwide Web. Took off, and they decided to incorporate and make it a legitimate business.

So in March of 1995, they incorporated and -- and they've grown the business ever since then.

Q. And what type of business is Yahoo!?

A. So Yahoo! offers a number of different services. We have about 660 million users around the world. They use a number of different products, such as

e-mail and instant messaging to communicate with friends and family around the globe.

They offer a bunch of information services. Think of -- think of a newspaper online that's interactive that has a bunch of links. You can go and find information about news or your favorite sports team or your financial information, or if you want to find educational information, such as how to get a job or how to find -- how to find schools. On Yahoo! Health, there's information on different diseases that you can research.

So it's a lot of information that we provide for free to our advertisers -- I mean -- sorry -- to our -- to our users.

Q. And how do you provide all of those services free to users like us?

A. We're -- we're an advertising supported business, just like a newspaper. We sell advertising on our web pages. And that's how -- that's how we're able to offer our services for free.

Q. And how long has Yahoo! been advertising on the web?

A. Well, we started advertising just after the company was -- was founded in -- in 1995. That's when we first started selling advertisements.

Q. Okay. And if you'll open your book I gave to you, please, sir.

A. Sure.

Q. And turn to Defendants' Exhibit 545.

A. Okay. I'm there.

Q. Do you recognize this document?

A. I do.

Q. Can you tell me what it is.

A. Sure. This is a -- this is a contract with Ziff Davis. Ziff Davis was a media company, and Yahoo! was a startup with a funny name at the time, and this was a contract that partnered with a major media company in March 4th, 1996.

Q. Okay. And did Yahoo! -- were you able to partner with Ziff Davis?

A. Absolutely. It was a successful partnership.

Q. And it looks like there's several things attached to this, like a -- looks like Disc 1 and Disc 2 with a bunch of information about the company?

A. That's right.

Q. Why would all that be attached in March of 1996?

A. Well, we had a partnership with Ziff Davis to sell advertising. We sold banner advertising, search advertising, and had other components of this

partnership, and we were doing this as early as March 4th, 1996.

Q. And if you'll turn with me now, please, sir, to Defendants' Exhibit 550.

A. Okay.

Q. Do you recognize this document?

A. I do.

Q. And is it all one document, or is it more than one?

A. There are a number of advertising insertion orders as part of this.

Q. Okay. And can you tell us --

MS. DOAN: Let's go to a page we can read a little bit better. Alan, if you'll go to Yahoo! 34899.

A. Okay. I'm there.

Q. (by Ms. Doan) Okay. Can you tell us what this -- what this is, this page.

MS. DOAN: Very good. Thank you. I can see it.

A. Sure. This is an advertising insertion order, and just to explain what that is, it's a contract with advertisers that want to advertise on Yahoo! websites. This particular one is with Travelocity based in Dallas, Texas, for a number of search keywords.

Q. All right. And the keywords, are they there in the middle, just highlighted there, airfares, airlines, vacation planning, and travel planning?

A. They are. Travelocity happens to be an online travel agency, and so they wanted to buy keywords that were related to their business, airfares, airlines, vacation planning, those sorts of things.

Q. And would Yahoo! charge per term, or how did that work?

A. In this particular case, we charge for that bundle of four terms. We charge $2,000 per month for all four of these terms.

Q. Okay. And now, looking at Exhibit No. 550, are there different companies, types of companies, that Yahoo! advertise with?

A. Yeah. There are a number of companies. We had -- just like a newspaper, we had -- pretty much anyone interested in reaching our users would advertise on our sites.

You can -- I don't know if you want to flip through there, but here's one from a computer company; here's one from a company called Diabetes Research, which that one jumped out at me. I have a son that has juvenile diabetes, and so that's something that would might be of interest to me that I could find information

on our website.

Q. Okay. And I think the one we have up now is on CompuBook, and it's for the words CompuBooks?

A. Yeah, that's right.

Q. Okay. And was the search -- was this search advertising in response to keywords?

A. Yes. This was all in reference to keywords.

Q. Did Yahoo! run the search advertising program in 1996 on its own, or was it outsourced?

A. No. It was -- it was our sales force and our system in 1995 -- 1996.

Q. And if you'll look at Exhibit No. 549, please, sir.

A. I'm sorry. 549?

Q. Yes.

A. Okay.

Q. Can you tell me what this is.

A. Sure. This is a contract for a partnership with Visa that we signed in March 27th, 1996.

Q. And attached to that contract, there is a document --

MS. DOAN: Alan, it's 35112. 35112, please, sir.

A. I'm sorry. Can you repeat that?

Q. (By Ms. Doan) It's Bates Stamped No. 35112 at

the bottom.

A. Okay.

Q. Can you tell us what this document is.

A. Sure. This is our Form 10-Q. This is our company filing with the Securities and Exchange Commission. That's a government agency.

And as a public agency, every quarter, we're required to file our company financials and information about our business.

Q. Okay. And attached to the 10-Q for -- is this the second quarter of '96?

A. This is the second quarter, that's right.

Q. Okay. If you'll turn to Bates Stamp No. 35122.

A. Okay. Found that.

Q. Can you tell -- can you tell us what this value-added link agreement is.

A. Sure. That shows a -- that shows the partnership agreements that we have with Digital Equipment Corporation. They were our search provider at the time.

Q. For your sponsored search or for your natural search?

A. They provided our natural search results. Yahoo! provided our sponsor -- or our search advertising

results.

Q. Okay. And if you'll turn a couple of pages over to 35124.

A. Okay.

Q. There is a paragraph with value-added link.

A. Okay.

Q. Can you tell us what this describes.

A. It basically describes what -- what we provide. So AltaVista, the search -- the natural search results are being provided to us, and Yahoo! is providing a value-added link, or these are our search advertisements on the site that show up on those search results.

So this is basically our form of search advertising in 1996.

Q. Okay. And you see there where it says: When Yahoo! initiates a query to AltaVista using the VAL interface, the query will be transmitted to AltaVista where it will be processed, and the results will be sent using the VAL interface to the Yahoo! property?

A. That's right.

Q. And if you'll turn to Exhibit No. 546, please, sir.

A. Okay.

Q. Can you tell us what this is.

A. Sure. This is a -- a request form for an advertiser that wants to advertise their products on Yahoo!.

So we have -- on the next page, there are a number of offerings -- advertising offerings that we have. You can see search word, banner, campaign, front page promotion, directory campaign. These are the types of advertisements that we offered in -- back then.

Q. Okay. Now, I noticed that the copyright date is somewhere between 1994 to 1996.

A. That's right.

Q. Okay. And how long did Yahoo! have its own search advertising system?

A. Well, starting in early 1996, we had been -- we've had our own search advertising system and have sold search keywords.

Q. Okay. At any point did Yahoo! start outsourcing their search advertising by keywords?

A. Yeah. Several years later, in 2001, at the end of the year, in November, we -- we partnered with a company called Overture.

Overture was an innovative company that -- that did sponsor search or selling search advertising better than anybody else, and we decided that they did it better than we did, so we decided to partner with

them in -- in November of 2001.

Q. And how long were you partners with Overture for search advertising?

A. Well, we partnered with them for several years, and in 2003, we decided we liked the company so much that we acquired them and brought them into -- into our company.

Q. Now, I'm going to go back to November 2001. What was the name of the search advertising we were partnering for Overture?

A. That was Sponsored Search.

Q. And is it the same Sponsored Search system that we have today, just with additional tweaks?

A. The very one, yes.

Q. Now, in 2003 -- or 2002, were you on the team that led the Overture acquisition?

A. I was. I led the deal team for that transaction.

Q. Can you tell us what that involved.

A. Sure.

So in acquiring any company, we're going to do a fairly substantial amount of due diligence. We'll meet the management team. We'll meet with the engineering team. We'll review all of their assets, such as their infrastructure, their buildings, their

patents, their technology, their partnerships, a whole host of contract.

It's a process that takes several weeks, if not months, and that's -- that's the process involved in -- in acquiring the company. And that's what we went through with Overture.

Q. Okay. And what all did we -- did Yahoo! acquire from Overture in 2003?

A. Well, the company was growing very rapidly at the time. They had over a thousand employees. They had a number of facilities where they would develop their technology. They had the largest search advertising patent portfolio at the space of the time. It was very large, several hundred patents.

There were very talented engineers and developers. There were a number of business partnerships. I mean, this was a real substantial company. It was growing very rapidly and was the pioneer for search advertising at the time.

Q. And did you indeed acquire the Davis patent at that time?

A. The Davis patent and a number of other patents, yes.

Q. And when I say the Davis patent, the Davis patent and its entire family of patents with it?

A. Yeah. There were -- there were a number of patents related to the Davis patent as well.

Q. And if you'll look at Exhibit No. -- Defendants' Exhibit 771. I think it's already in evidence.

A. Okay.

Q. And that's the Davis patent you were just talking about?

A. That's correct. That's the Davis patent.

Q. And can you read the title of this patent to us, please.

A. Sure. This is a system and method for influencing a position on a search result list generated by a computer network search engine.

Q. All right. And if you could turn to Exhibit No. -- Defendants' Exhibit 669.

A. Okay.

Q. Do you recognize this document?

A. I do. This is another patent acquired as part of that portfolio of patents with Overture.

Q. Okay. And can you read the title of this document to us, please, sir.

A. Sure. Automatic advertiser notification for a system for providing place and price protection in a search result list generated by a computer network

search engine.

Q. And then one more. If you'll turn to Exhibit No. 658, please, sir.

A. Yes.

Q. Okay. And if you'll -- and is this another patent?

A. Yes. This was --

Q. And can you tell me about this patent, please, sir.

A. Sure. This was a patent. Looks like Meisel et al. Meisel happened to be the CEO of the company at the time. So I spent a lot of time with him. You want me to read the patent here as well?

Q. Please. Please.

A. A system and method for enabling multi-element bidding for influencing a position on a search result list generated by a computer network search engine.

Q. And was the Meisel also acquired -- well, or was he already at Yahoo!?

A. No. He was at Overture, and we acquired his company.

Q. Okay. And then if you'll turn to -- I'm sorry. There's one more. Exhibit No. 729.

A. Okay.

Q. And this appears to also be a Davis patent,

but a different patent by the same Davis; is that right?

A. That's right.

MS. DOAN: 729.

Q. (By Ms. Doan) And can you read the title of this patent to us, please, sir.

A. Sure. System and method for influencing a position on a search result list generated by a computer network search engine.

Q. And why was it important to Yahoo! to acquire Overture and the Overture search patent portfolio?

A. Well, as I mentioned earlier, they -- they were the pioneers in search advertising. They had the patent portfolio that protected that search advertising business. And they were -- and so we were -- we were looking to acquire that to replace our search advertising business.

Q. And with the patent portfolio, you also acquired all their employees as well?

A. Yeah. It was a -- these guys were head and shoulders above just about any -- anybody else at the time. So it was a -- it was a very meaningful transaction for us. And their patent portfolio was certainly an important part of that.

Q. Okay. And this is the same Sponsored Search program that we're talking about now?

A. That's correct.

Q. All right. If in 2004, someone had come to Yahoo! and -- well, let me start -- I'm sorry.

On the executive management team, is part of the issues that you deal with major deals and whether to make them or not?

A. Yes. Major deals would come to the executive management team.

Q. Are you on the licensing committee?

A. I am not on the licensing committee.

Q. Do any of the licensing deals ever roll up to the executive management committee?

A. If it's a substantial deal, then yes, it would come to the executive management team.

Q. In 2004, if someone had approached Yahoo! about taking a patent license for $17 million, what would be Yahoo!'s reaction?

A. We would have said no.

Q. Why is that?

A. That -- that's a substantial amount of money, and we would -- we have a substantial patent portfolio of our own that protects our business.

Q. Does Yahoo! license its own search engine patent portfolio?

A. We do.

Q. And who do we license? To different search engines?

A. Yeah. Companies in our industry, search advertising, search industry, that's right.

Q. Okay.

MS. DOAN: Thank you, Your Honor. I pass the witness.

THE COURT: Okay. All right. We'll pick up with cross-examination tomorrow morning at 8:30.

Ladies and Gentlemen, I'm about to excuse you for the evening day.

At jury selection, I indicated that I might need you for a small portion of Saturday.

Unfortunately, I think I'm going to need to come in on Saturday for about two hours.

What I need you to consider, though, is the purpose of convening on Saturday is going to be for hearing final arguments of the parties and receiving the Court's jury instructions.

After that, the case is up to you. So what I'm telling you is, I can be available all day Saturday, if you want to begin deliberations Saturday after you get the Court's charge.

If you want to come back Monday and begin deliberations, that's fine, too. I'm going to leave

that up to you to think about tonight. And if you want to stay longer Saturday, begin your deliberative process, that's fine with me. I will make myself available to do that.

But why don't you give me your verdict on that in the morning, okay? Just think about it, and if you need to visit about your schedules and arrange your schedules, you'll have time to do that today and tomorrow, okay?

With that, y'all are excused. Please don't talk about the case. Travel safely home.

LAW CLERK: All rise.

(Jury out.)

(End of Testimony.)

* * * *

CERTIFICATION

I HEREBY CERTIFY that the foregoing is a true and correct transcript from the stenographic notes of the proceedings in the above-entitled matter to the best of my ability.

/s/_____ _____
SUSAN SIMMONS, CSR Date
Official Court Reporter
State of Texas No.: 267
Expiration Date: 12/31/10

/s/_____ _____
JUDITH WERLINGER, CSR Date
Deputy Official Court Reporter
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